An insight on time-use surveys: A case study on time poverty in Spain

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A mis padres

Afortunado es el hombre [mujer] que tiene tiempo para esperar.

Calderón de la Barca

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Abstract

Historically speaking, time-use surveys are not a new survey method. They were first designed and used in the early years of the 20th century to understand that part of people's lives for which information was not available from conventional data sources such as national income, labour and employment statistics. From a feminist perspective, one of the main contributions of time-use surveys is that they have allowed 'measuring' unpaid work, which until recently was concealed despite being essential for understanding gender inequalities—and inequalities in general—and labour market organisation.

Time-use surveys allow introducing and improving the measurement of poverty that emphasising gender differences and finding other perspectives that are far removed from the 'traditional' economic ones based on male conceptions and understandings.

The main objective of this work it to provide some insights into how to improve time-use data and time-poverty indicators from a feminist perspective. In order to do this, we analyse time poverty in Spain using the last two Spanish time-use surveys. Although time surveys are a powerful tool to measure unpaid work, we have found significant limitations in the way data are collected and studies are carried out. We analyse the determinants that affect time poverty in Spain, and will look as well at children and older adults' time poverty, which help us make some policy recommendations.

At the same time this thesis aims at contributing to the theoretical framework of poverty in two original ways: 1) analysing the Spanish case, the concept of time poverty, and the methodology used to measure it in rich countries with different time-income dynamics; 2) analysing poverty from a different perspective, which enables an improvement in time-use statistics still very much driven by male standards of economic behaviour.

The main driver of this work is the awareness of the need to improve time-use surveys and their comparability, and of the possibility of carrying out an important amount of research by using time-use survey data. In this sense, this work aims at contributing to the discussion on how to improve time-use surveys from a feminist perspective through the analysis of Spanish time-use data.

Contents

List of tables

List of figures

1. Introduction

Time and money are two of the main constraints that people can suffer in their lives (Burchardt, 2008). However, measuring well-being and poverty has been dominated by the neoclassical approach, which assumes that income is the variable that best represents well-being. Income has been traditionally linked to wages and employment, which were originally reserved for men; therefore, approaches that focus on income tend to be androcentric. Given the limitations of these approaches, the issue of alternative measures of welfare has emerged in recent years. Time is a multidimensional concept that allows including some of these demands. Time-use surveys (TUS) stand as a major turning point in studies on work and daily life since they offer quantitative information and some limited qualitative data on women's and men's use of time, which, until their development, were unavailable or only partially available.

In this work, we examine time-use surveys from a feminist perspective, which allows a critical analysis of how non-remunerated work is considered in these surveys and how they ought to be improved. To this end, we analyse time use in Spain through the last Spanish time-use surveys available, which will be used first as a case study to examine time-use surveys and make proposals, and then as a source of information to analyse time poverty as an issue that affects predominantly women.

Time-use surveys enable us to understand how women, men, girls and boys spend their time on a given day or week, and to measure all forms of work, particularly volunteer and unpaid care and household work. These surveys provide evidence of the gendered division of work within households and of the interdependence of women's and men's paid and unpaid work (UNDP, 1990). In fact, the Beijing Platform for Action appealed to countries to make visible the full extent of women's contributions to economic development through 'the promotion of the importance of conducting regular time-use studies'.

From the field of feminist economics, differences in time use are analysed as a significant aspect of male privilege and female disadvantages. Many researches see

quantitative time-use studies as an important source providing empirical evidence to support their claims. However, theoretical works on the nature and meaning of time suggest that the studies are mainly based on male experiences and assumptions, and are consequently not taking into consideration unpaid work to its full extent (Bryson, 2008).

Time is a multidimensional concept, as are poverty and well-being. Throughout history, authors have approached it from various philosophical, economic, historical and physical perspectives, discussing different aspects of it such as measurements, perceptions, natural rhythms, etc. We talk about time as a real object with a physical capacity to be measured. People create time through their actions and, thus, time becomes part of the structure of their usual activities. The problem stems from the social construction around it, meant to capture it by measuring it in minutes, hours, days, years, etc., through the clock and the calendar. Yet, time is more complex, having been the reference that people have used throughout history to symbolise or capture the course of events and the relationship between periods (Cristina Carrasco & Recio, 2014).

In industrial societies, working time—as an important source of income—is perceived as a scarce resource and is commodified, i.e., it takes the form of money (Adam, 1999). In the same sense, we can talk about time poverty, understanding time as a scarce resource. One of the main aims of this thesis is to enhance the meaning of time poverty and to examine the extent to which we can measure it through the time-use surveys currently available, especially within a developed-country framework.

Working time can be converted into money. Symbolised by money, time enters economic calculations. It is considered an opportunity cost: the time used in a non-productive activity, or in producing at a slow pace, represents an economic loss. Consequently, the question arises of how to make the most of time, in the best possible way; a higher speed at work will mean time savings and greater efficiency, which is related to time rationalisation and control mechanisms. However, we must bear in mind that rationalisation and efficiency are usually beneficial for the company, but not so for working people whose multiple private-life time—devoted to family, care, friends, etc.—have to be synchronised with the time spent on

paid work (Cristina Carrasco & Recio, 2014), which plays a crucial role in the well-being of people. In some way, it is not possible to measure this opportunity cost and the need for synchronisation just by using traditional time-use surveys.

For mainstream economics, time is homogeneous, has a market price according to the person's 'human capital', and is allocated to different activities at the individual level. Consequently, non-remunerated time becomes invisible and can only be recognised as long as it has a commercial reference, in which case it will also be conceptualised as money. On the other hand, paid time is assumed to be homogeneous, quantifiable and transformable into money (Adam, 1999). It is presented separately from life cycles, perceptions, emotions, and, in general, from everything that is life beyond work under capitalist relations of production.

As a result, the time that is merchandised and managed by companies is the central time priority, considered to be more important than others. It is dominant in that it has been imposed on people and has become part of their culture, leaving the rest of times mediated and evaluated in relation to them (Cristina Carrasco & Recio, 2014). However, different times are necessary for life. Care, affection, family relationships and leisure require time that, rather than measured and valued in money, is 'time lived', with a component that is difficult to quantify.

The development of industrialisation favoured the increasing physical separation of the space where market production took place and that in which life was managed. The continuous increase in salaried work implied other important changes: most families became dependent on a salary, women became economically dependent on their husbands, and domestic and care work became dependent on having or not having a paid job that provided the income required to perform the rest of activities. Furthermore, the male breadwinner family model (with men responsible for contributing money to the household, and women responsible for taking care of people in the household) was increasingly dominant. The physical separation of the spaces where the different tasks were carried out led to both processes—paid work, and domestic and care work—being presented as parallel and independent (Cristina Carrasco & Recio, 2014).

These inequalities have been essential for social preservation. Most women, as caregivers, are available 24 hours a day; their time is time donated and generated. More often than not, they do not have their own time, in the sense of a time about which they can make their own decisions. Rather, their time is shared, relational, and coordinated with other 'significant' times (Cristina Carrasco, 2003).

The relationship with time in modern societies is neither natural nor fair. Time is used, priced and assumed in ways that reproduce and maintain economic, social and political inequalities (Bryson, 2016). These inequalities operate at global, national, local and domestic levels to privilege some nations, classes and ethnic groups over others. In prioritising the temporal experiences and needs traditionally associated with men rather than women, and generally providing men with more free time than women, today's time culture also sustains deep-seated gender inequalities in all areas of life.

Feminist economists have long argued that the standard income-based poverty measures and macroeconomic measures are inadequate because they make no reference to unpaid work (Benería, Berik, & Floro, 2015). Including time in the equation allows researchers to measure all forms of work, mainly unpaid care work, which until recently was kept hidden.

The lack of recognition of women's work and participation in the economy was addressed in the four World Conferences on Women held in 1975, 1980, 1985 and 1995. However, it was not until the most recent conference, held in Beijing in 1995, that there was a clear call for better gender statistics, especially time-use surveys, in order to measure women's contribution to well-being through paid and unpaid work.

The importance of time use stems in part from the understanding that the welfare of individuals and households is a function not solely of their income or consumption, but also of their freedom in allocating time (Wodon & Blackden, 2006). The focus of the case study presented in this work are individuals who are significantly limited by time and income constraints. Poverty is multidimensional and the lack of time aggravates consumption and income poverty and vice versa (Bardasi & Wodon, 2010).

In recent years, there has been increasing concern with the phenomenon of time poverty, drawing attention to the distribution of available time and its relationship to structural and household situations. Nevertheless, most studies demonstrate that average weekly free time in the majority of Western societies has actually increased over time (Gershuny, 2018). Less consideration has been given to the distribution of available time Chatzitheochari and Arber (2012). The vast majority of research works have thus far focused on work–family balance and paid work– unpaid work balance in working couples, while explicit examinations of inequalities in free time remain less common (Bitman & Wajcman, 2000; Sayer, 2005).

At the same time, few attempts have been made to formally operationalise the concept of time poverty in order to build an insightful indicator that can be used in sociological analysis and policy making (Bardasi & Wodon, 2006; Williams, Masuda, & Tallis, 2016).

The case study presented in this work focuses mainly on time poverty in Spain. Conceptually, time poverty can be understood as the fact that some individuals do not have enough time for rest and leisure after working in the labour market, at home, or performing other activities such as fetching water and wood. Another way to consider the issue of time poverty is to argue that individuals who are extremely pressed for time are not able to allocate sufficient time for important activities, and are therefore forced to make difficult trade-offs between time and income (Burchardt, 2008; Wodon & Blackden, 2006).

Including time in poverty indicators is a way of recognising that households and individuals need more than money to reach a minimum level of well-being. In fact, what is needed is a different approach or framework, focusing on the quality of life of women and men and recognising the activity of care as central. This implies a disruption of the established model and, at the same time, requires re-thinking the way time-use surveys are designed.

However, the accumulated experience of more than two decades since time-use surveys became widespread alerts us to the limitations of this type of study. Although the surveys have represented an essential methodological advance in the analysis of time and work, it is necessary to reflect on their analytical and theoretical limits and make new proposals to

improve them.

1.1 Motivation

The main motivation of this work is related to the limitations encountered when analysing time poverty in Spain. For this reason, the main contribution of this work is towards shedding some light on how TUSs can be improved from a feminist perspective, meaning that life sustainability is taking into consideration care as a central element to achieve minimum standards of living.

The main motivation derives from a double objective. On the one hand, to look at poverty from a multidimensional point of view, out of the androcentric framework, which takes into consideration unpaid work. On the other, to reinforce the importance of time-use surveys and, at the same time, reflect on their limitations and to provide some proposals for improvement.

Although many limitations have been found in the analysis of time poverty and care activities through currently available time-use surveys, the aim of this thesis work is to provider some recommendations on improvements that could be made in time-use surveys and studies, as well as in time-poverty indicators, in order to obtain a more accurate picture, one that covers a wider spectrum of different realities. In this sense, we focus on unpaid work, and on how time-use data can contribute to a better understanding of the essential role of care in achieving a certain level of well-being.

In order to analyse time-use data and time-poverty indicators, we have studied a time-poverty case in Spain. This fulfils two objectives in one and allows us to examine Spanish time-use surveys in greater depth—and to understand their limitations. It also enables the analysis of time poverty, about which no previous studies exist. The stimulus comes from the need to study and understand the implications of time-use data for poverty indicators, allowing unpaid care work, which until recently had remained invisible and socially devalued, to be taken into consideration.

The main contribution of time-poverty measures is that they allow both paid and unpaid work to be incorporated into poverty indicators. However, it must be remembered that these two types of work are conceptually different and, in many aspects, not comparable. Unpaid work is not just work without any kind of remuneration, it is an activity that involves affection, feelings and relationships, which are not possible, or not easy, to measure. Yet, this does not mean that it should not be taken into consideration and included in the analysis, for it is indeed critical for the understanding of certain levels of well-being.

There are important policy implications related to time poverty, which we will try to highlight some of them, given the important limitations they can impose on daily life and their impact on well-being and the development of fairer societies. It will also contribute to support some of society's demands related to the importance of unpaid work.

The second original aim of this work was to evaluate the impact of the economic crisis on how time is distributed between women and men. However, the cancellation of the 2015 Spanish time-use survey reoriented this motivation towards a more methodological proposal based on the limitations found during the study of time poverty.

The time poverty of children and older adults will also be addressed. Most studies on time use have focused on the working age population and only a few have looked at children's time use. Here, we will study the implications of fathers' and mothers' time poverty for how children spend their time.

With regard to older adults, despite their being outside the labour market, time is also an issue. In some cases, they take on the additional care responsibilities of their partner, as well as taking responsibility for their grandchildren, potentially leading to time stress or time poverty. However, it is also found that older adults may have 'too much time' available, which will also have implications in terms of well-being.

1.2 The concept of work: Unpaid work

Before we continue, it is important to clarify the definition of paid and unpaid work as used in this work. The concept of work will be discussed throughout this thesis and is still a topic of debate among scholars, but it is essential to address the core matter here. Especially because it will be the focus of the discussion in the last section of this work.

Non-remunerated work is, by definition, without 'remuneration'. This does not mean that it is without economic value, nor that those who do it do not contribute to the economy of the household or to the macroeconomic output, but simply that it is not converted into the compensation of an immediate direct payment. The real economic contribution of non-remunerated work may in many cases be higher than that of a worker in the labour market Those who spend their time on it are therefore economically penalised rather than rewarded (Durán & Heras, 2012). Unpaid work often seems invisible to policy makers, who forget that not all value can be expressed in monetary terms, and that apparently 'unproductive' citizens may be making an essential contribution to society. For those who do this work for their own family, it is of course often enjoyable, often immeasurably rewarding, and often undertaken out of love. However, it is often physically and mentally demanding, sometimes tedious, and frequently not measured (Bryson, 2016).

Moreover, by focusing only on one part of the ''work'', this analytical scheme conceals the fact that the commercial subsystem works in conjunction with the family subsystem, which in practical terms means that the labour market cannot function without domestic work. It is true that, besides salary, income and social benefits, the other recognised way of covering human needs is through domestic work and care. From this perspective, the ''male'' model of the revenue provider (male breadwinner model) is thus complemented and sustained by the model of the woman ''housewife'', although this function is often neither recognised nor economically valued. The theoretical fallacy is to conceptualise employment separately and independently from domestic and care work, thereby creating the illusion that the latter is unnecessary and that the male employment model is extendable to the entire population. If so,

who would take care of human life, in particular that of dependent people, but also of independent people (Modroño & Agenjo-Calderón, 2016).

In 2008, the Commission on the Measurement of Economic Performance and Social Progress prepared a report commonly known as the Stiglitz-Sen-Fitoussi report. The report analysed the areas that are currently poorly measured by the GDP. This work explicitly recommends that the measurement of activities on the margins of the market should be included, by means of household satellite accounts (Stiglitz, Sen, & Fitoussi, 2009), so as to incorporate the change in time-use patterns in order to avoid creating a false image of prosperity by merely displacing activities from the household sector to the market or vice versa. The estimates of the International Labour Organisation (ILO) founded on data from 53 countries representing 63.5% of the global working age population show that unpaid care work amounts to 9.0% of the global GDP (Addati, Cattaneo, Esquivel, & Valarino, 2018). As we have already mentioned in this study, the androcentric approach underestimates the value of unpaid work, and the concept of 'unpaid' used in this kind of reports is still very narrow. This means that the above-mentioned value must definitely be higher because of two main reasons: the methodology applied in the survey, which we will discuss in this work, and the activities that are taken into consideration when we measure unpaid work.

The duration of remunerated work is quite easily determined by means of presence at the place of work, but the duration of non-remunerated work is more difficult to establish because of its discontinuous nature. Non-remunerated work continues longer throughout the day, and extends beyond the age of retirement. (Durán & Heras, 2012)

From a conceptual and broader point of view, we will use the third-party criterion established by Margarethe Reid (1934). Accordingly, when a third party could be paid to carry out the activity without the activity losing its aim, it needs to be considered work whether it is paid or not.

The use of the third-party criterion to define economic activities is questioned in economic evaluations of unpaid household work. The fact that it is widely accepted seems to justify its continued use as a positive alternative to production boundaries defined in the System of National Accounts, but there are serious theoretical concerns about the feminist practice of economics, raised by its defining the production boundaries in these terms.

The primary problem with the third-party criterion is, from a feminist perspective, that, while it does not rely on a strict market definition of economic activity, it nevertheless assumes the market as the model of economic activity. According to this criterion, if and only if an activity in the household has some commodity equivalent, it will be considered economic.

It is necessary to underline that this definition has been criticised, and has many limitations that are related to specific characteristics of unpaid work. Connecting the concept of work to satisfaction involves clear risks, since many professionals find great satisfaction in their work and are paid for doing it. The same is true of unpaid care work that is most often linked to the satisfactions of childcare and overlooks the care of elderly and dependent people, which may not be as satisfying or not satisfying at all. Childcare requires much of the parents' time, especially the mother's, whether it is direct care or not, and it is usually sub-registered in statistics because it is assumed to be natural and in no case considered a job. As suggested by Folbre and Nelson, it is carried out for love or money or both (Folbre & Nelson, 2000), showing the interconnectedness and duality that can be found in jobs/work, whether they are paid or not, and the difficulties of linking the definition of work (paid or unpaid) to satisfaction (Gálvez, Rodríguez, Agenjo, & Domínguez, 2013)

Furthermore, an important issue that should be taken into consideration or discussed is the assessment of whether certain activities should or should not be assumed by the market, or in what proportion or under which circumstances. This will be a topic of discussion in this thesis. For example: How much daily time is/should be considered appropriate for a boy or girl to spend at nursery school? , How much time will be desirable also for the point of view of the fathers? Definitely there is not an answer to these questions, but there are some researchers that has established some burdens in terms of time.

As concerns freedom, non-remunerated work is quite different from employment. Many non-remunerated activities are considered necessary, and are performed precisely because they are considered to be so, although they are not rewarded with any type of compensation (Durán & Heras, 2012). These activities are closely related to social and family imposition, especially in women: their unpaid care work indispensable to human well-being and the development of people's capabilities. *Who* provides that care and *how* it is delivered has, however, important implications for individual and societal well-being, which includes equality between men and women at home and at the workplace.

The greatest amount of unpaid care is provided at home, but not exclusively, because individuals also provide unpaid care to other families and the community. According to the definition of care work given by the International Organisation of Labour Economics, there are three aspects that define unpaid work services: housework (domestic services for end use within the household, indirect care); caregiving services to household members (direct care); and volunteer work (community care services and help to other households, both direct and indirect care) (Addati et al., 2018). This work follows the definition of the ILO, taking into consideration the volunteer work related to household and care activities as part of the total unpaid work.

In this thesis, we analyse the total work that allows us to measure the double or triple presence of women in the market, the home and the community, emphasising not the accumulation of days, but the obligation they have to ensure their presence in all spaces simultaneously (Orozco, 2006).

Thus, it seems appropriate to address a more universal concept of economic activity when formulating alternative measurement tools to the current ones. In particular, as regards the quantitative analysis of employment and in order to overcome the gender bias of current statistics, it is necessary to design tools that are capable of offering a global and systemic vision of the activity. It is necessary to conduct surveys intended to provide information on employment and the labour market that is systematically related to data on domestic family work, the global work load and the gender division of work.

The objective of this section has been to give an overview of how unpaid work is defined. Nevertheless, we will continue discussing the concept of unpaid work in the following chapters.

1.2.1 Current situation of unpaid work

As will be examined in this thesis, one of the main contributions of time-use surveys is the analysis of unpaid work. However, as occurs with other measures, time-use surveys present problems of harmonisation and comparability and, more important, pose the question of how and what to include as unpaid work. For example, the classification of activities in some countries does not separate childcare from adult care, or fetching water from travel time, and does not specify many other activities performed in developing countries. While diaries are considered the best method for measuring unpaid activities, this recording method is not systematically implemented in every region (Latin America, Africa, etc.), especially in developing countries, where it is more expensive to collect them— a factor which necessarily eliminates cross-country comparisons. The periodicity of data is also problematic, since time-use surveys are not consistently administered over time, and some of the available country data are out of date (Addati et al., 2018). Because of the limitation of time-use data, we will look at the most recent surveys in order to get an overview of the main differences in time-use data worldwide independently of the way that the data was collected.

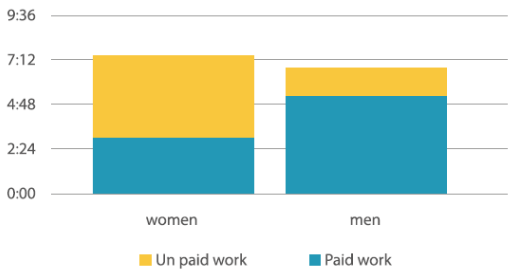
According to the latest ILO report (Addati et al., 2018) the time spent by women on unpaid care work varies enormously across countries, ranging from a maximum of 345 minutes per day in Iraq to a minimum of 168 minutes per day in Taiwan. Men's unpaid care work ranges from 200 minutes in Moldova to only 18 minutes in Cambodia. On average, men devoted 83 minutes to unpaid care work, while women devoted 265 minutes, more than three times the amount spent by men.

Across the world, without exception, women perform the majority of unpaid care work, namely 76.2% of the total amount provided. In contrast, men's average contribution to total

unpaid care work accounts for less than a quarter of the total amount. Globally, women dedicate, on average, 3.2 times more hours than men to unpaid care work: 4 hours and 25 minutes (265 minutes) per day against 1 hour and 23 minutes for men (83 minutes). On average, over the course of a year, this represents a total of 201 (8-hour-long) working days for women and 63 working days for men (Addati et al., 2018).

This conspicuous gender gap in unpaid care work has two main effects. First, women account for just over one third of the non-remunerated work, second, the total number of women's working hours per day is higher than that of men when both forms of work are taken into account. The gender gap in total daily working time is thus of 44 minutes (see Figure 1) (Addati et al., 2018). As already mentioned, there is no clear agreement on total time due to differences in methodology, the definition of the concept of work and the date base. Therefore, all conclusions related to paid/unpaid work and leisure time should be treated with caution.

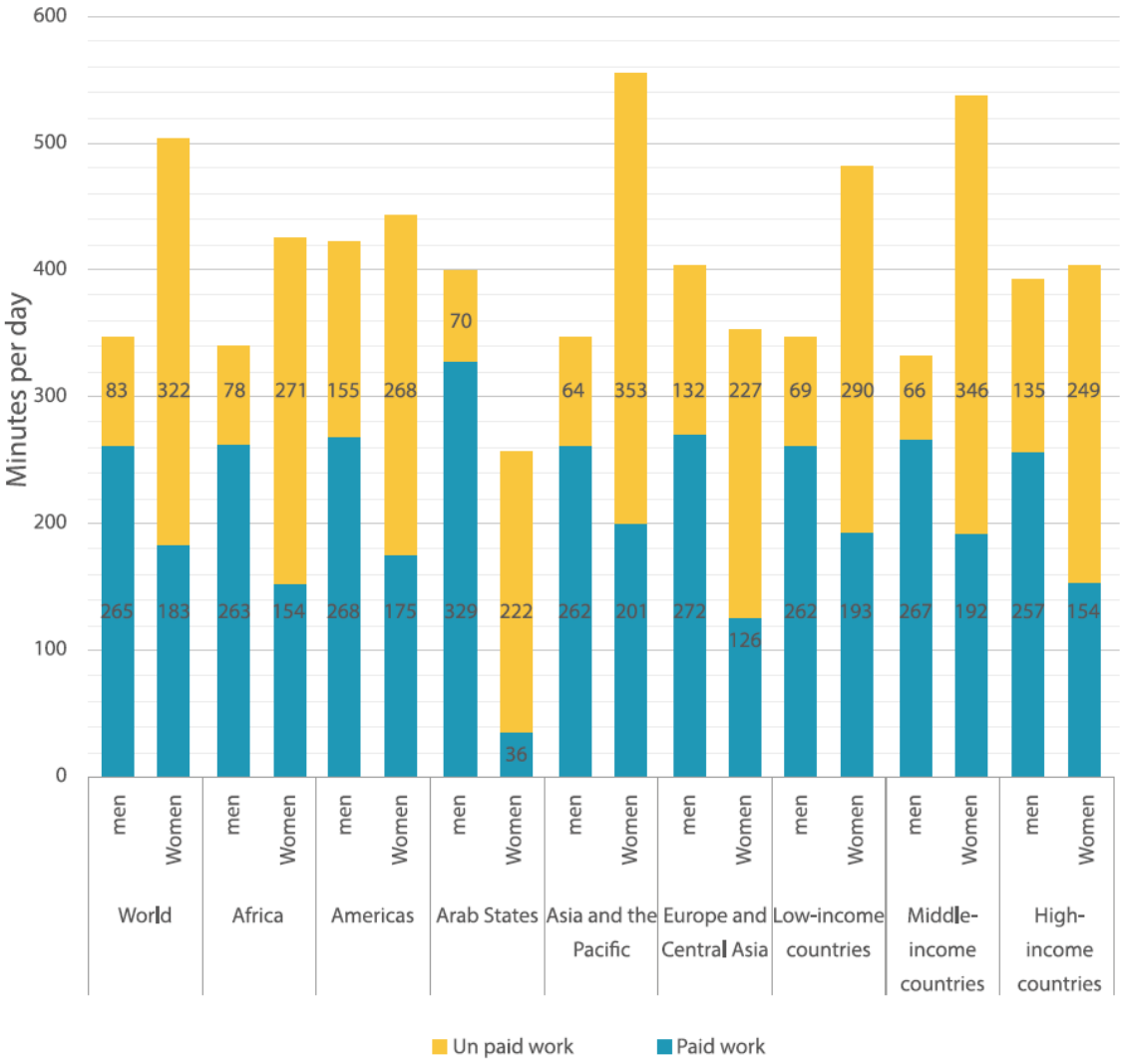
Figure 1: Gender distribution of paid and unpaid work among working age respondents: world average by sex, latest year



Source: ILO, 2018.

According to the ILO report, there is no country in the world where men and women are responsible for an equivalent share of unpaid care work. However, Northern European countries are closest to gender equality, with men performing over 40% of the total volume of unpaid care work. At the other end of the scale, men in Mali, Cambodia, Pakistan and India provide less than 10% of the total unpaid care work (Addati et al., 2018).

Figure 2: Time spent on paid, unpaid and total work by region



Age Group: 15 and older. Global, regional and income group estimates weighed by the working-age population. Percentage of working-age population and number of countries: World: 67% (64); Africa: 35% (12); Americas: 47% (7); Arab States: 29% (4); Asia and the Pacific: 80% (11); Europe and Central Asia: 68% (30); Low-income countries: 32% (5); Middle-income countries: 65% (30); High-income countries: 90% (32). Unpaid care work and paid work may not add up to total work due to rounding..

Source: ILO, 2018 (Addati et al., 2018).

In every region, women spend more time on unpaid care work than men, ranging from 1.7 times more in the Americas, 2.1 times more in Europe and Central Asia, 3.4 more in Africa, 4.1 times more in Asia and the Pacific, and up to 4.7 times more in the Arab States (see Figure 2). As a result, in every region, women dedicate less time than men to paid work. According to this data (Addati et al., 2018), women working more hours than men when unpaid care work and paid work are added together. According to the ILO, in seven out of 64 countries, men spend more hours per day on paid and unpaid work combined. It is in Europe and Central Asia that men perform the highest share of unpaid care work of all regions (Addati et al., 2018).

The substantial differences in the relative contributions of women and men to both unpaid and paid care work vary also according to country income. The time spent daily by women in unpaid work is the highest in low-income countries followed by middle-income countries and then high-income countries. This could be a result of most women salaried workers in high-income countries, whereas a high proportion of women are own-account or unpaid contributing family workers in their family's farm or business in low- and middle-income countries. Low GDP per capita also serves to push women into participating in work for pay or profit (Addati et al., 2018).

When total work is analysed, women in middle-income countries have, on average, the longest working day, while this total is lowest in high-income countries. This represents a difference of almost an hour between the two groups. It is in low-income countries, however, that the gender gap is most outstanding. According to the ILO, 2018 GDP per capita only partly explains these gender gaps. It is in middle-income countries that women spend the longest

hours on unpaid care work followed by low-income and then high-income countries. This is despite the fact that in higher-income countries household chores are far more capital intensive, and therefore less time-demanding. On the other hand, men's total amount of unpaid care work is the highest in high-income countries(Addati et al., 2018).

1.2.2 Gender differences in unpaid work

In the article 'Gender, Time and Inequality' by Lilian Sayer (Sayer, 2005), the author summarises the two explanations of gender differences in time use that prevail in the literature: the economic/bargaining perspective and the gender perspective (Coltrane, 2000; B. Risman, 1998; Shelton & John, 1996).The economic/bargaining perspective emphasises rationality, relative resource levels, and explains the reasons why women's and men's time allocations have changed in response to shifting economic, demographic and normative conditions. Women's rising educational attainment and wages have reduced their 'comparative advantage' in unpaid work, while declines in rates of marriage, increases in age at first marriage and declines in fertility have reduced unpaid work demands. Consequently, women are shifting increasing amounts of time from unpaid to paid work. Additionally, because increases in women's education, employment and earnings have strengthened their negotiating power, men's unpaid work time should also be increasing. This perspective points to a continued change in women's and men's work time allocations throughout the 1990s due to women's substantial gains in education, labour force experience, wages and occupational attainment, both in absolute terms and in relation to men.

On the other hand, the gender perspective, as an alternative, emphasises the resilience of gender inequality and the elements that work against change in the gender division of work. According to feminist scholars, unpaid work is not a gender-neutral pack of tasks that women perform out of comparative advantage or lower resources, but rather because of the reproduction of unequal power relations between women and men (Thompson & Walker, 1995). Additionally, not doing unpaid work, or at least eluding certain activities, is one way

men demonstrate their masculinity and reinforce their structural and cultural power (B. Risman, 1998). Therefore, this perspective predicts that sharply differentiated gendered time-use patterns may have evolved to reflect changing demographics, economics, and norms, but the recreation of gender inequality continues to be a fundamental product of gendered time allocations.

From a gender perspective, we find that women have less available time than men because women 'are responsible' for guaranteeing that most of the unpaid work gets done, irrespective of how much time they spend on paid work. Both theoretical perspectives find support in empirical literature, as will be shown later in this work. Even though women have increased their hours of paid employment, men still spend more hours on paid work than women do, and married men allocate more time to paid work than married women (Sayer, Casper, & Cohen, 2004).

Having some freedom to organise and manage one's own time is an important source of well-being. This is why it is important to study people's care needs, the biological and emotional care requirements throughout their life cycle, the duration and distribution of the care required, according to the type of household they live in, the relevance of the public sector in the provision of care, the involvement of women and men in the total amount of work, and the various demographic aspects, for social care needs depend in part on the latter.

In 1997, Nancy Fraser (1997) argued that gender equity needs to be re-conceptualised as a 'complex notion comprising a plurality of distinct normative principles'. One of the seven key principles that she proposes as crucial to gender equity concerns the distribution of leisure time, which is directly related to the way that unpaid and paid work are distributed. We agree that this is an important dimension of inequality, and consider that there is lack of information and studies about how leisure is distributed.

At the same time, it is important to mention that unequal access to free, available time is politically important. One effect of this can be the absence of those with direct experience in caring responsibilities from the positions of power. The intersection of time poverty with other

forms of social and economic disadvantage means that it is particularly unlikely that the poorest and neediest will be heard (Bryson, 2016).

In this work, we discuss this traditional classification of activities; moreover, we will discuss a re-classification. Most time-use studies focus on the distribution of paid and unpaid work, and less do so on available time. This work analyses time poverty, which is basically the result of how available time is distributed. For this reason, it is important to analyse the definition of available time. Since the activities categorised under self-care (e.g., sleeping, eating, and grooming) are practically constant, it makes sense to talk about a choice between work, whether paid and unpaid, and leisure. There is evidence that an increasing proportion of people perceive their lives as rushed and feel they do not have enough time to fit everything in. A related finding is that people are feeling more stress from time constraints. To complete the picture of increasing time poverty, people agree with the proposition that they have 'less free time than in the past' (J. Robinson & Godbey, 1997). There is also a new trend related to the stress of needing to be doing important things, linked to higher social status. Historically, unequal access to free time has frequently reflected and reinforced unequal access to economic resources, with lower status or class groups and manual workers putting in longer hours for less reward than large land or capital holders and managerial and professional employees. Today, some researcher argue that this class pattern has been reversed in many Western nations, with long working hours and lack of leisure seen as both a sign of status and a means to achieve career success, so that the 'money-rich' are now also the 'time-poor' (Gershuny, 2005; Sullivan & Gershuny, 2004).

Women's work typically involves coordinating multiple activities—the 'sequencing and prioritising of certain times'. The implication of this perspective is, therefore, that women's experience of leisure is also distinctive and difficult to disentangle from multiple and overlapping activities (Bitman & Wajcman, 2000). Consequently, highlighting the character of women's available time suggests reformulating the concept of a gender gap in leisure and time poverty. The crucial issue is not just that women may have less primary available time, but that women's available time may be qualitatively 'less leisurely' than men's (Deem, 1988).

1.3 Structure

This thesis is structured into six chapters. The first chapter reviews the theoretical framework that sustains this work in order to understand the importance of analysing time-use surveys from a feminist perspective. Moreover, in the second chapter, we look at the main trends and changes in time-use data in Western countries, which are those with a longer series of datasets allowing the analysis of shifts in the way men and women spend their time since the first time-use survey carried out by Szalai.

The third chapter reviews the main time-use data gathered through surveys performed in Spain, and the main studies about them, as well as the databases. There is a long tradition of time-use studies in Spain. However, the datasets are the result of different objectives, methodologies, etc., which makes them difficult to compare. This work focuses on the most recent Spanish time-use surveys carried out, respectively, in 2002–2003 and 2009–2010. Both of them followed the Eurostat recommendations for Harmonised European Time Use Surveys (HETUS).

The fourth chapter analyses time poverty in Spain using the last two time-use surveys, and examines time poverty and its determinants. The measurement of poverty is based on previous poverty measurements. Care activities are considered from a broader perspective and some adjustments are made that will be duly explained in detail. Moreover, we look at the more vulnerable individuals in terms of income and time poverty. At the same time, we investigate the main determinants of time poverty using a probit model, and look at how children and older persons spend their time, in order to have a complete picture of time use in Spain.

An important social, demographic, and economic trend is that Europeans are living longer and spending more time in retirement. Little is known about how retirees spend their time. Such information could be important in understanding the contributions of retirees to the economic output, through both paid and unpaid or voluntary activities, considering both their care needs and the care they provide to others (spouses or grandchildren). This enables a better

acquaintance with the health care and other service needs of older adults.

The fifth chapter of this thesis work, which is its major contribution, reviews, from a critical feminist perspective, the time-use surveys analysed in the previous chapters, and delves as well into the analysis of time poverty in Spain. Finally, it includes a brief analysis of time use among children and the elderly. This review allows highlighting some critical points concerning the design of time-use surveys and poverty indicators that should be taken into consideration for future developments.

The final chapter summarises the main contributions of this work and emphasises the need to continue working on and improving the theoretical framework that sustains time-use surveys, as well as the way the data are collected and the indicators used.

2. Time-use data

The main objective of this chapter is to give an introduction to time-use data from a feminist perspective. In the first section of this chapter, we will look at time-use data from a general point of view. In the second section, we will review time use data from a feminist perspective in order to analyse specific aspects that need to be taken into consideration. At the same time, we will focus on the main tendencies in the time-use data trend in the developed world, for those are the only long-term time – use diary data available. In the last section we will introduce the concept of time poverty, which will be later analysed in chapter 3 as a key indicator that requires improvement and standardisation to allow the performance of international comparative analysis.

2.1 Time use as a key aspect in measuring well-being and poverty

Time diary studies have a long history, starting with the activities of late 19th century Russian official 'researchers' investigating the daily life of peasant families. In the second decade of the 20th century, Maud Pember-Reeves, who was researching on behalf of the Fabian Society in London and may have been aware of the previous Russian work in this area, collected a small number of single-week diaries written by six working-class housewives in London (Reeves, 1914). Strumilin collected large diary samples in the USSR between 1921 and 1923 for economic planning purposes (Zuzanek, 1999), and the United States Department of Agriculture (USDA) built a major collection of women's diaries (with farm, town and 'college women's' samples) between 1925 and 1931, as part of its agricultural extension work program. The academic study of time use originated in the United States with the work of the Russian émigré and sociologist Pitirim Sorokin, who had been a colleague of Strumilin's in Moscow in the early 1920s. His *Time Budgets of Human Behaviour* (Sorokin & Berger, 1939) provided a first introduction to this field to many social scientists. Public and private broadcasting organisations developed interest in diary studies ever since the 1930s. The BBC's

pioneering Audience Research Department conducted 'viewer/listener availability studies' that involved the collection of detailed activity diaries from 1937 onwards. The Columbia Broadcasting Corporation did the same from the early 1950s, and the published reports from this source, combined with those from the USDA, contributed important materials to the first academic studies on historical change in time use based on diary books and notes (Converse & Robinson, 1980; Vanek, 1974).

In the 1960s, the expansion of welfare policies and of the consumer society triggered the desire of democratic European countries to generate this type of data(Saralegui, 1997) . Within this framework, a multinational project of comparative research on the uses of time got started. Under the coordination of Alexander Szalai (1972), the population of thirteen time-use surveys conducted in eleven (mostly European) countries was studied simultaneously. The study, known as the Szalai project, took place under the auspices of the UNESCO during the 1960s in various areas of eleven countries (at national, regional, or local level), and is considered the antecedent of current time-use surveys, since it was used to test certain methodological aspects, such as the classification of activities or the use of diaries for collecting information, which are present in the design and application of surveys conducted in many countries nowadays. This multinational study led to the development of a standardised sampling procedure, a diary format and a data collection procedure. Furthermore, in the mid-1970s, with the creation of the International Association for Time Use Research (IATUR), the scientific treatment of time-use surveys was reinforced.

In the 1980s, many countries in Western Europe had developed statistical tools to determine the distribution of time across the population. Most surveys were conducted as proper statistical time-use surveys, while some were only a part of other surveys. Currently, many countries are conducting series of time-use surveys over extended periods of time in order to evaluate changes in behaviour and identify trends. Comparing time-use surveys conducted in different periods allows assessing the changes that have occurred in those areas, including variations in domestic and care responsibilities. This chapter reviews some of those tendencies, mainly in Western or developed countries (Europe, United States, Canada and

Australia), where data are available for longer periods of years.

The lack of recognition of women's work and women's participation in the economy was addressed in the four World Conferences on Women, held in 1975, 1980, 1985 and 1995 under the auspices of the United Nations. All these conferences helped highlight the significance of gender inequality, not only in relation to labour, but in many other areas such as poverty, education and health, violence against women, the effects of armed conflicts, economic participation, power-sharing, mass media, environment and development. However, only at the most recent conference, held in Beijing in 1995, was there a clear call for better gender statistics, especially in time-use surveys, so as to measure women's contribution to well-being through paid and unpaid work (Esquivel, 2011).

Furthermore, mention has already been made of the role of feminist economics in reinforcing time-use studies. Traditional economic analyses tended to render a large proportion of women's work invisible, because the concept of economic activity was directly or indirectly associated with the market. Income-earning activities were conceptualised as work. The invisibility of women's work, together with the gendered views of the proper role of men and women in society, resulted also in the underestimation of women's economic activities. This issue has been subject to debate since the late 1970s, and, consequently, much progress has been made regarding the conceptual, methodological and practical implications of improving labour force statistics and incorporating unpaid work into national income accounts. All four areas of work affected—subsistence production, the informal sector, domestic work and volunteer activities—have required a methodological and practical effort, but only the latter two, and particularly domestic work, have also asked an important shift in conceptualisation. Subsistence production, despite being unpaid work, is viewed as producing marketable goods; estimates of this output have been included in many countries' national income accounts since the 1950s. Similarly, the difficulty with the informal sector is not conceptual—for it is based on paid activities—but caused by its underground and unrecorded character. This is not the case of unpaid domestic and volunteer work, the inclusion of which in national accounting statistics has been met with greater resistance. Domestic and care work have been primarily

viewed as the female private sphere of daily life, often in contrast with the predominantly male public sphere of the market. The two were understood as separate and non-comparable, because 'work' was defined in relation to the market sphere (Beneria, 1982; Folbre & Abel, 1989). Including unpaid domestic production in GDP accounts seemed a farfetched idea to many, even in the late 1970s, and was often met with hostility among the same academic and professional circles that were eventually instrumental in developing the theoretical and practical tools needed to account for it. Yet, much progress has been made since then, not only in the ideological acceptance of such concept but also in its practical implementation.

This effort has been made by academic and government instances in different countries and by international organisations such as the International Labour Organisation (ILO) and the United Nations. It has resulted in a historical revaluation of women's work (Folbre, 1991), as well as in the necessary groundwork for an improved system of accounting. On the conceptual side, the definition of the economically active population has been broadened to include unpaid production. Thus, a system of multiple definitions for multiple uses has been suggested, meaning that different sets of data can be constructed for different purposes. With regard to methodology, substantial progress has been made on two fronts.

Work by academics and experts at different institutions such as the UN Statistical Commission has led to the recommendation of constructing satellite accounts to provide estimates of the contribution of unpaid domestic work to national income. Time allocation surveys can yield the systematic data needed to measure all forms of unpaid work. The implementation of these efforts is primarily a matter of political will, and, to this end, several countries have already introduced changes in their statistical surveys and legislation.

Nearly a 100 surveys for 65 countries are currently available for comparative analyses (Addati et al., 2018). However, the progressive international and national expansion of time-use studies is not homogeneous in terms of perspectives and methodological strategies. Moreover, there are different classification systems applied to time-use data, among which HETUS (Harmonised European Time Use Survey), ICATUS (International Classification of Activities for Time Use Statistics), and CAUTAL (Classification of Activities for Time-Use

Data from Latin America and the Caribbean). Additionally, many countries, like, for example, Australia, New Zealand and the United States, have developed their own classification systems. Although carrying out comparative studies has its difficulties, it is possible to analyse data taking the limitations of each data classification into account. On the one hand, studies that pursue a merely descriptive objective must be differentiated from those that respond to explanatory interests. On the other, there are two main methodological survey models: time budget surveys, which are mainly based on diaries, and activity surveys, which include questions such as 'How many hours do you spend doing a certain kind of activity?' The majority of developed countries produce time-use statistics following indications on time-use diary techniques. This method is based on the respondents noting down, every a certain amount of time , the main activity they are doing, their secondary activities, the people present while they are doing them and the place where they are. It is a closed 24-hour diary, which, 'in principle', registers direct and accurate information on the activities, time and space of each person in a representative sample of the population. In contrast, activity surveys are the best option to establish the distribution of time when research resources are limited and the focus is on a particular topic of interest.

Before analysing time poverty in Spain in the fourth chapter of this thesis work, we provide an in-depth explanation of how diaries are designed and the specific information they provide, taking the Spanish case as the example and following HETUS. The last chapter will critically analyse diaries and questionnaires, considering the advantages and disadvantages of both methods and proposing some methodological alternatives. However, this thesis aims at reinforcing the importance of questionnaires for time-use studies despite their general consideration as 'second option'—at least in Western countries—for collecting data, after the diary. Nevertheless, one of the main limitations of these two kinds of surveys is that they only provide a picture of how people use time at a particular moment in their lives. To understand and explain the processes and social relationships developed around the use of time, it seems necessary to consider the influence of the life cycle. Undoubtedly, to build such perspective, longitudinal data (panel data) and more qualitative information are required. The leading

attempt in this regard is the European Community Household Panel (ECHP). The ECHP was a survey carried out in 15 European Union countries in the period 1994–2001, a standardised multi-purpose annual longitudinal survey that contained information on demographics and other socio-economic aspects. As a panel survey, it followed individuals and included measures of satisfaction with various domains in life, collecting information—depending on the wave—on gratification, the number of hours spent on care activities, etc. (Peracchi, 2002). Other attempts have also been made at national level in the United Kingdom, Germany and Australia.

Time-use statistics are generally reported in either the number of hours (or minutes) spent on certain activities or the percentage of time devoted to them, or both, which is the most accurate method. However, the simplest and most common way of presenting statistics is providing the number of hours devoted to the different activities. The main categories used by scholars are the following: paid work, which refers to time spent on activities for which the individual receives payment in exchange for labour; unpaid work, i.e. time spent on productive activities in which the individual does not receive payment; total workload, which is the average number of hours an individual spends on both paid and unpaid work; and non-productive activities, which are personal and recreational activities including leisure and personal care. In this work, these categories will be analysed and discussed.

Even though developed and developing countries have built their respective perspectives on time-use surveys, there is agreement on the importance of time-use surveys as contributing to offer a complete picture of society by providing detailed information on how people spend their time on different economic and non-economic activities. In fact, it can be said that time-use surveys are the only survey technique presently available that provides comprehensive information on how individuals spend their time on a daily or weekly basis (Gershuny, 1992).

From a general point of view, according to Hirway (2000) and conceptually speaking, time-use studies contribute to three major areas, and, in that sense, this survey method is standing on three main pillars. First of all, time-use studies provide a complete picture of society by making visible those areas that are not covered by the current statistical system—

even though with some limitations. Secondly, time-use studies shed light—also with some limitations—on the paid and unpaid work of men and women, which may help integrate paid and unpaid work in national policies. Third, time-use surveys provide better estimates of work and workers, as well as of national incomes, and thereby significantly contribute to improvement in conventional economic statistics.

2.2 Time use from a feminist perspective

Feminist efforts in the field of gender and development have resulted in a growing body of work, both theoretical and empirical, using qualitative as well as quantitative data, and representing a very important contribution to the analysis of unpaid work. The recommendations of this dissertation will focus mainly on time-use studies analysed from a quantitative point of view; however, the last part of this work will highlight the importance of qualitative studies and the need to improve quantitative research methods.

Many feminists see the unequal distribution of time spent on unpaid work as part of a vicious circle that leaves women economically and politically disadvantaged; their resulting economic dependency reduces their ability to assert their own time needs and makes them more vulnerable to exploitation and abuse, while lack of available time makes it difficult for them to gain a political voice. Access to available time is also an important issue in its own right, and Nancy Fraser has argued that its equal distribution should be pursued as a key aspect of gender equity (Fraser, 2009).

There is an important body of sociological and anthropological work that argues that our perceptions and understanding of time are not 'natural' but socially produced; as such, they may vary over time, from one culture to another, and between social groups. In that sense the general framework where time-use surveys are developed is likely to reflect the experiences of men rather than women.

Marilyn Power, in her article *Social provisioning as a starting point for feminist economics* (Power, 2004), summarises the different kinds and approaches of feminism. She

finds there is a consensus among many feminist economists around five fundamental methodological points. First, care and domestic work are vital parts of any economic system and should be incorporated into the analysis from the beginning, not as an afterthought. One implication of this is that interdependent and interconnected human actors, rather than the isolated individual, are at the centre of the analysis (Folbre, 1994; Gideon, 1999; Nelson & Ferber, 1993). Second, human well-being should be a core measure of economic achievement. Properly evaluating economic well-being requires attention to aggregate or average distributions of income and wealth, but also consideration of individual entitlements and what Amartya Sen identified as the heterogeneity of human needs (Maria Sagrario Floro, 1995; Amaryta Sen, 1999). Third, human agency is important. Processes, as well as outcomes, should be examined when evaluating an economic event. This emphasis on agency means that questions of power, as well as unequal access to power, are part of the analysis from the beginning (Albelda & Withorn, 2002; Hill, 2003; Peter, 2003). Fourth, ethical judgments are a valid, inescapable, and, as a matter of fact, desirable part of economic analysis (Beneria, 2003; Nussbaum, 2003; Robeyns, 2003). Fifth, feminist economists incorporate considerations of class, race-ethnicity, and other factors into the research, acknowledging the limits of conceiving 'women' as a homogeneous category. A clear recognition of these points of methodological convergence may be useful in establishing the framework of this work.

The concept of social provisioning allows for a wider understanding of economic activity that includes women's unpaid and nonmarket activities, and avoids the narrow concept of 'economic = monetarised'. The social provisioning approach emphasises the importance of social norms (Himmelweit, 2002), which affect both economic processes and outcome. Processes are take place within a social, cultural, and political context that is complex, changing and most of the time difficult to understand and study. In summary, the social provisioning approach is characterised by the inclusion of unpaid and caring labour; the emphasis on well-being; the analysis of economic, social, and political processes and power relations; the articulation of feminist ethical values; and the consideration of class, race-ethnicity and other differentiating aspects. Not all these issues can be studied at the same time, but, undoubtedly,

studies on time-use surveys and data can contribute to a better understanding of the social provisioning approach and also theses aspects need to be taken under consideration when we design the collection tools.

The imperative need to coordinate different times in daily life makes us think that, rather than talking about a single concept of time, we should talk about 'times'. All these times are heterogeneous in the following terms, 'from *time measured to time lived*':

1.1 Time manifests different dimensions: there is a time that we can define as more objective, capable of being measured and quantified, regulating the different activities of people. However, there is also a more subjective time, barely measurable, understood as that which is not materialised in any concrete activity, destined to invisible tasks, but which demands concentration and energies of a person.

1.2 The times are not equal in terms of importance or social recognition; some are more privileged than others. Paid time is clearly a priority over the times that fall outside the market-based orbit; it presides over and determines the rest of the times under the perspective of productivity and male-centred organisation.

1.3 There is a second dimension of subjectivity that incorporates much more intangible aspects, connected to the subjectivity of the person who is immersed in the experience. These are aspects related to the kind of life and relationships the individual would like to have in order to give meaning to their everyday life.

1.4 Time devoted to leisure and personal relationships has a high degree of flexibility, often used as an 'adjustment variable' for domestic work and caregiving time: an increase in the latter quickly reduces leisure time, particularly that of women. The importance of this time lies in the sociable nature of individuals. In general, personal relationships satisfy our emotional, affective and communicative needs, and, within the family, networks of mutual support are created that cover different needs throughout a person's life.

1.5 Time spent on 'citizen participation' is also flexible. It includes time dedicated to all types

of volunteer work: participation in associations, political parties, direct volunteer work, etc. These activities generate important levels of satisfaction, as well as a sense of personal fulfilment, and are fundamental for the construction of integration networks and social cohesion. A more participatory society is a more democratic, better-informed society with greater influence on political decisions.

Time spent on paid work determines the rest of times, which must be organised and distributed into hours, days or years of paid time. This centrality of paid work time generally prevents us from carrying out the remaining activities under good conditions, with important consequences for the quality of the care work and the lives of women who are primarily responsible for it (Cristina Carrasco & Recio, 2014).

However, it is possible to approach the topic of the social organisation of these times from the perspective of the sustainability of human life. A society built on the premise that the priority lies in people's standards of life, in the quality of life of women and men of all ages, recognises the activity of care as central, which, in terms of time, implies a break from the established model. In this sense, it is also worth noting some theories developed in Latin America during the 1990s. A number of Latin American countries have attempted to implement alternative development models to the prevailing neoliberal approach. One such country is the Republic of Ecuador, which has established a development plan called '*buen vivir*' (good living) as a national form of thought based on pre-colonial indigenous concepts. It proposes an inclusive economic system, based on relations of equitable production and reproduction, under the principles of sovereignty, solidarity, equality, redistribution, and social, economic and environmental justice. The economy must prioritise human needs and collective welfare, valuing and supporting the different modalities of economic initiative that do it also. It is essential to acknowledge the interrelation and similar importance of the productive and reproductive spheres, to assume the economy of care as a priority, to guarantee recognition and retribution to all forms of work. These practices must be strengthened and the economic and other kinds of exchanges that the peoples and nationalities have generated need to be revalued, and should result in strategies for the achievement of food sovereignty (León, 2008).

Traditional perspectives in economics have only valued and identified the capitalist market-based space as their object of study, maintaining the invisibility of domestic and care work carried out basically by women. It is therefore important to design a new time policy based on considerations that will be addressed more in detail in chapter 3 of this work We must take into account the totality of people's activities and social realities, including all the experiences that give meaning to life: the different jobs, leisure time, social participation, etc., which constitute a 'whole' that is impossible to investigate separately. These activities require not only a certain number of hours to be performed, but also coordination with other people's time. In particular, if the ultimate objective is the population's welfare, the time dedicated to domestic and care work aimed at satisfying people's basic needs should be considered essential.

In chapter 3, we will analyse the concept of time poverty. Most discussions on time use or time poverty focus on the quantity of time allotted to various activities, but Reisch (2001) affirms that quality of time is more important. More specifically, quality of time depends on: 1) the availability of large blocks of time, 2) having autonomy over time allocation, and 3) having time that adjusts to the time rhythms of others. Similarly, (Etkin, Evangelidis, & Aaker, 2015) describe how conflicting objectives for a particular hour decrease our enjoyment of that hour and make it feel shorter. A focus on quality shifts the attention to the importance of the subjective aspects of time use, but most researchers concentrate on the minutes and hours allocated to different types of activities due to simplicity and lack of data on the quality of time.

The concept of available time is usually defined as the contrary of time spent on responsibilities and work in constrained activities. In labour economics, available time is understood as the opposite of paid work. In popular discourse, available time is conceived as free time, time at one's own disposal, or 'pure leisure'. The difficulty in relying on quantitative measures of primary leisure is that they assume all available time is homogeneous, that is, pure available time. Most measures presented in the literature rely on this basic assumption. However, according to the available time-use data, it is not an easy task to differentiate the various types of leisure.

Neither is it easy to capture the specificity of women's relationship to time using mass survey techniques. It is important to evaluate the extent to which traditional time-use surveys can be used to research the actual experience of available time. In order to assess women's distinctive experience of leisure time, a dataset is required that contains high-quality information about simultaneous activities, the number of activity episodes, and the existence of background family care and other responsibilities considered important. This will be developed in the final chapter of this work.

Synchronisation is also important; previous research works have referred to higher levels of time pressure among women, related to greater work–family conflicts (Sayer, England, Bittman, & Bianchi, 2009), and to the difficulties of synchronising women's diverse time schedules (Southerton & Tomlinson, 2005). Obviously, time pressure is particularly severe for those with stressful schedules, such as mothers with care responsibilities who also have their own career, or single parents. It is likely that, in a situation where women are increasingly moving into the labour force and are still largely responsible for domestic work, the conflicts involved in managing work and family will lead to increase feelings of time pressure among women in comparison with men.

The simultaneousness of activities is another aspect to be taken into consideration. People frequently engage in more than one activity at the same time; this is what Wajcman refers to as *temporal density* (Wajcman, 2015). The idea is that a leisure activity with no distracting accompanying activities to constrain it is different from one that is accompanied by constraining or supervising activities (Bittman & Wajcman, 2000). Women especially suffer from this phenomenon, and sometimes are not even aware of being engaged in more than one activity at the same time. In this sense, diaries are still a limited instrument, and they need to be improved in order to collect more accurate data on simultaneous/secondary activities and even tertiary activities.

Additionally, the experience of leisure changes substantially according to its fragmentation. It is often reported that people feel their leisure time is not only scarce but also more harried, implying leisure has become more fragmented (Bitman & Wajcman, 2000). Two

people can experience the same aggregate of leisure time, but those with more fragmented leisure, consisting of a greater number of leisure episodes of shorter duration, may justifiably feel more rushed. Highly fragmented leisure is indicated by the short duration of the longest episode, while, conversely, unbroken periods of leisure indicate a higher quality of leisure. Leisure time that is unceasingly disrupted by the intercession of a great number of externally generated non-leisure activities beyond the control of the actor is of lower quality than uninterrupted leisure. A higher number of leisure episodes to achieve a comparable total amount of leisure indicates leisure of a lower quality. Again, an increase in the number of separate leisure episodes may provide an explanation for the high proportion of the population reporting feelings of being rushed (Bittman & Wajcman, 2000).

The fragmentary character of women's available time changes its quality. Fragmented time, rushed between work and self-care activities, is less relaxing than unbroken available time. It is likely that this fragmented leisure will be experienced as more harried and therefore increase self-reported stress. Indeed, it may well be that the contemporary view of increased 'time pressure' has more to do with this fragmentation than with any measurable reduction in primary leisure time. Moreover, studies on leisure confirm that social differences between parents and non-parents are as important as gender differences.

These changes are in some ways reflected in diary data by the shorter duration of the activities. Time spent on particular activities seems more fragmented and, consequently, more pressured. Time-use diary data can show how fragmented people's time is. The more activity events an individual has per day, the more activity changes or interruptions occur, and the shorter, on average, is the duration of each activity. The more activities there are, the less time is spent on each. This measure of the fragmentation of time has been used in previous research to identify inequalities in available time in the United States (Sevilla, Gimenez-Nadal, & Gershuny, 2012).

One of the key aspects that we have already mentioned is the availability of time free of constraints. The proportion of adult leisure time devoted to adult leisure activities is another key indicator of the character of leisure. This is a measure of pure leisure, understood as an

activity free of constraints. In this sense, this measure reflects how pure leisure may be contaminated by the combination with simultaneous activities, for example, the presence of children or another dependent person for whom one is responsible (Bittman & Wajcman, 2000).

This means that parents are under permanent demand to modify their own leisure preferences in order to focus on activities directed at their children. The amount of leisure time spent with children is an important aspect of the quality of adult leisure experienced by mothers and fathers. We could argue that leisure activities without children indicate a purer quality of adult leisure (Bittman & Wajcman, 2000).

One can arguably consider that the best leisure is achieved when playing with one's own children. However, the fact that parents derive considerable pleasure from attending to their children's needs does not detract from the argument that they may, at the same time, be experiencing an adult leisure deficit. Here, women are significantly disadvantaged by their unequal responsibility for the care of children (Bittman & Wajcman, 2000). Generally, the leisure of parents is principally oriented around family activities, especially when children are young. Nevertheless, women are further disadvantaged by their disproportionate responsibility for the physical care of children. They spend more time physically caring for children than playing with them. By contrast, the time fathers spend with their children is more likely to be in the context of play than care (Folbre, 2004; Folbre & Bittman, 2004). In sum, a gender gap in leisure emerges.

As might be expected, based on the relatively uneven distribution of total work time, the mean number of hours of primary avaliable time of men and women is, as mentioned before, slightly different (but not as much as expected, as we will see in the following chapters). At the same time, we find the subjective impression of increased time pressure among women. This could be in part the result of a narrow concentration of the quantity of leisure time. Feminist scholars have claimed for some time that women have a different experience of leisure, which is difficult to disentangle from their multiple and overlapping activities. However, this argument has largely remained unsubstantiated because of the insistence that

only qualitative techniques can capture this experiential dimension of time. Clearly, there is a need for better techniques that reflect the reality tested. Measures based on comparing the amount of time spent on episodes of primary leisure disregard the constraining nature of women's unpaid family responsibilities, rendering the consequences invisible. This is one of the main reasons explaining why better time-poverty measures are needed for a better understanding of what is behind the big numbers in terms of valuable time among men and women.

Nevertheless, the subjective impression of time pressure deserves further discussion. Wajcman (2015), in her book *Pressed for Time*, highlights the importance of being able to determine how one uses their time, of looking at the distribution of time and its changing dynamics. The vast interest generated by the idea that time is in short supply in modern societies is not new. Understanding why time pressure has increased is a critical social question because of the consequences for people's physical and mental health. Wajcman also points outs that economic progress and increased prosperity were assumed to generate more leisure time, not time scarcity (Wajcman, 2015).

Concepts relating to time pressure or hurriedness in daily life can somehow be tested using time-use diary surveys. The sense of an increasingly harried experience of time may arise, at least in part, from changes in the density of the time experienced. For example, an increase over time in the number of activities engaged in simultaneously (multitasking) may have the effect of producing a feeling of greater time pressure. Multitasking literature based on time-use data has focused particularly on how women's greater levels of multitasking mean that their time is more pressured than that of men (Sullivan & Gershuny, 2013).

Furthermore, Giménez Nadal and Sevilla, in their article entitled 'The Time-Crunch Paradox', present time-use and leisure-satisfaction data for a variety of Western European countries, and show that accounting for socio-economic factors that vary between men and women is critical. The authors find that working mothers have leisure levels that are much lower than those of working fathers and singles. Working mothers are also most likely to report the least satisfaction with their free time. The authors find that time stress and leisure time are

correlated, and greater feelings of time stress are closely associated with lack of leisure time (Jose Ignacio Gimenez-Nadal & Sevilla, 2012). In particular, it has been found that women's leisure time is more fragmented—more likely to be interrupted by other activities—and shorter in duration than men's leisure time.

Another problematic issue that time-use studies have focused on 'activity' (Szalai, 1972). Less attention has been given to the constraints of supervisory responsibility imposed by the care of young children, individuals who are sick or disabled, and the weak and elderly. The distinction between activity and responsibility is particularly relevant in the case of women, who are the ones primarily responsible for care activities. For example, they tend to omit supervisory activities or care, including time when children are asleep. On the other hand, 'work intensity', measured by overlapping activities or the presence of multiple activities, is an important aspect of work processes that has received little attention. The effect of work intensity likely depends on the level of effort that the person puts into the required activities, and, in general, women tend to engage in more joint production than men (Maria Sagrario Floro, 1995).

As regards joint activities, in recent years many time-use researchers have recognised the limitations of findings based only on primary activities and weekly averages. For example, Duncan Ironmonger (2004) has claimed that diary entries recording childcare as a main or primary activity are 'virtually arbitrary', and he argues that the care of children should always be coded as a primary activity, regardless of how the respondent records it. Although recent national surveys have not yet gone so far, their designers increasingly see the need to include both secondary activities and other contextual information if they are to provide meaningful insights into the social implications of time use. For example, the 2000–20001 United Kingdom national survey sought to collect data on secondary activities specifically in order to 'provide important information about the known under-recording of childcare'(Short, 2006). It also asked about the presence of other adults and children during working hours, making it easier to identify childcare responsibilities when these are not recorded as an activity. An assessment from the Office for National Statistics of the 2000–2001 United Kingdom survey suggested

that future surveys should investigate subjective feelings of time pressure; it also said that respondents should be asked to record when they are responsible for a child, even when not engaged in an activity with them, as this would identify their availability for other activities more accurately (Short, 2006) .

Thus, Bittman and Wajcman (2000) have used Australian data to show that although women and men have similar total quantities of free time, women's leisure is in general 'less leisurely' and more likely to be 'constrained' or 'contaminated' by domestic and caring responsibilities than that of men. In a related move, Maria Sagrario Floro and Miles (2003) have used the data to highlight the higher rates of overlapping activities among women, and to suggest that this is likely to have negative effects on their well-being. Similarly, Sullivan (1997) has used a particularly detailed British study from the 1980s to show that women are more likely than men to do more than one thing at a time and that their leisure is more fragmented; she argues that this is likely to contribute to feelings of stress and time pressure. However, United States data from 1998–1999 seem to suggest that, although women have less free time than men, it is not significantly more fragmented or constrained (Mattingly & Blanchi, 2003).

Lynn Craig (2002) has also used detailed Australian data to assess the 'time costs of parenthood'. She finds that parenthood increases women's social disadvantage by accentuating the gender division of labour, augmenting the time that women spend in unpaid domestic work and shopping, and reducing their time in paid employment, while the reverse occurs for men. She has also found significant differences in the ways that mothers and fathers use their childcare time. Not only do fathers spend a higher proportion of their care time in 'play, talking, educational and recreational activities' than mothers, who spend more time on physical childcare tasks such as feeding and bathing, but fathers' activities are also generally more flexible and less time constrained than mothers'. Fathers are also seldom solely responsible for their children (mothers are present 90% of the time fathers are caring for their children). This has important implications for gender inequality, as it means that fathers' greater involvement does not 'free up' time for women, who are still often 'inadequately assisted in the challenge of balancing work and family commitments' (Craig, 2006). United States data also find men

less likely to spend “free time” on their own with children (Mattingly & Blanchi, 2003).

Karen Davies has introduced the concept of ‘process time’ to describe the kind of temporal consciousness that caring for others often requires; this is not free-standing but ‘enmeshed in social relations’, and it is distinct from ‘the dominant temporal consciousness in our society: the linear hand of the clock’ (Hall, 1989). Davies’ analysis also shows that ‘female time’ is not only different from men’s, but is also obliged to be hidden and also more complex to measure and analyse.

This analysis has major implications for time-use studies. It means that, even though the attempt to measure time spent on care may be intended to recognise women’s experiences and needs, it actually results in a confirmation of male time, which is likely to misrepresent the nature and implications of caring roles and responsibilities. It reduces care to a set of discrete and quantifiable activities. It loses sight of the emotional aspects of care and the distinction between ‘caring for’ and ‘caring about’ (Dalley, 1996). It cannot capture the ‘being there’ aspects of care (Boyd, 2002). It does not distinguish between ‘childcare’ as a set of tasks and activities and ‘mothering’ as a personal attachment, a state of mind and a constant attentiveness that is much more than the sum of its parts. And it offers no way of recognising the pressures and guilt that people experience around what they do not do. As discussed in the previous section, time-use research has become more sophisticated and open to some feminist concerns. However, people fill in the diary detailing about how was their day. Indeed, from a feminist perspective, the respondents’ ability to conform to the expectations of time-use researchers may be seen as an ability to conform to the model required by hegemonic masculinity, which marginalises ‘other’ experiences and ways of knowing, rather than as a vindication of the diary method.

2.2.1 Tendencies in available time in developed countries

In general terms, we can say men engage in more market work than women. And the gender differences arise when we measure in the total amount of work-. Despite the obvious importance of looking more closely at how people spend their paid and unpaid work time, relatively little attention has been paid to describing its patterns and examining its determinants (M. Burda, Hamermesh, & Weil, 2013).

Some tendencies in time-use data are unclear. Women continue to do more housework than men, but decomposing changes in the amount of time women and men spend on domestic work indicates that women's propensity to do this kind of work has declined since the 1960s while men's has increased (Bianchi, Milkie, Sayer, & Robinson, 2000). Fathers' propensity to engage in childcare activities has also increased substantially since the 1960s (Sayer, Casper, et al., 2004).

Also, there are movements towards a new masculinity and a more egalitarian society. This is a model of men who are more sensitive, capable of understanding and expressing their emotions; men who care more for themselves and their families; who are more tolerant with the diversity of sexual orientations and options; less violent and committed to fighting all forms of oppression over women and other men.

The so-called new masculinities arise as an alternative to hegemonic masculinity. The term 'hegemonic masculinity' refers to dominant masculine behaviours, which include the more traditional models of gender domination, based, for example, on mandates such as 'men don't cry', 'they are always brave', 'nothing feminine', 'unquestionably heterosexual', etc. In other words, it is about values, beliefs, attitudes, myths, stereotypes or behaviours that legitimise the power and authority of men over women (and all others who are not heterosexual men).

Hegemonic masculinity has given rise to a whole political and social organisation based on the idea of male leadership and the predominance of men's worldview over other forms of life. However, this hegemony can also be reproduced in models that are presented as

alternatives and new (and not only in traditional masculinity), which is why the very concept of 'new masculinities' is constantly reviewed. Thus, one of the bases for rethinking masculinity is its self-reflective and critical capacity towards the different models, values, practices and experiences of masculinity (Walters, 2010).

There are no clear endings about tendencies in the long run, because there are different kinds of analyses, using different kinds of data, and comparing different periods, but, in conclusion, we can say that two different scenarios emerge from time-use literature:

- Research based on cross-sectional data at one point in time underlines that the reallocation of women's and men's time has ended because the male identity is still associated with being the breadwinner, while the female identity continues to be associated with being the person responsible for unpaid work (Gershuny & Sullivan, 2003; Gerson, 1993; Kan, Sullivan, & Gershuny, 2011; Potuchek, 1997; Sullivan, 2004).
- Analyses of trends in time use suggest that a gradual evolution in the reallocation of women's and men's time between paid and unpaid activities is occurring. It is argued that the different findings are based on a variety of sample populations, methodologies, definitions of work and free time, and/or a focus on only one domain of time use (Gershuny, 2018).

Thus, what is needed is a careful examination of comparable estimates of paid and unpaid work and available time to measure the extent to which women's and men's time uses have continued to converge across all domains, or whether, instead, change has stopped. However, the general consensus is that there has been a greater convergence between men and women in terms of time use over the past 50 years than any time before (Gershuny, 2018).

The way women and men divide their time has changed over the last 50 years: while women's overall time in unpaid work has decreased substantially on a cross-national basis, the time that men spend doing such work has increased much more modestly. Despite movement towards greater equality, the trends for women and men do not meet, reflecting the persistently

unequal load of unpaid work and care assumed by women, who still do more than 60% of the overall unpaid work(Addati et al., 2018).

The employment and education opportunities opened to women during the second half of the 20th century were, in most societies, much wider than those their mothers experienced. Attitudes, though, have changed more slowly. The accumulation of paid and unpaid work experienced nowadays by a woman who forms a heterosexual partnership is the outcome of the combination of her paid employment with her own and her partner's expectations regarding gendered housework responsibility. The effect is exaggerated if she has children. The outcome for her is reduced leisure time, limited choices regarding family formation and employment combinations, inhibited career development, or all of these together.

However, the appearance of relative gender balance is not all it seems, because these overall averages of time spent in paid and unpaid work disguise some critical inequalities. First, there is an intimate connection between unequal time and unequal money. The fact that men do more paid work and women do more unpaid work has important knock-on consequences for earnings inequality, among others. First, additional time spent in employment for men translates into potential for greater human capital accumulation meaning extra skills and experience, leading to greater employability and greater opportunities for promotion. At the same time this additional human capital contributes substantially to the pervasive and still significant gender gap in wage rates. Second, some specific subgroups do more overall work than others. In this sense, when we define average time there is an important reality hidden about how men and women are spending their time.

These studies allow us to understand the big picture, but more careful studies are required at a national scale to show a different reality, because, as mentioned before, the concept of 'care' is underestimated. Most of the studies do not take into consideration care work performed in other households, volunteer work and other aspects that are difficult to measure with the time-use data currently available. Therefore, conclusions should be taken carefully.

In addition, it is important to say that not all time is equal. Research shows that women's unpaid work is likely to involve multitasking, in particular childcare along with other household tasks. Women are also still regarded as responsible for the management of what goes on in the household in terms of childcare, shopping and housework (even when it is not them who actually carry out these tasks), a fact that is likely to increase feelings of stress.

Studying these differences is crucial because determining people's access to available time is a central point that should be taken into consideration in relation to inequality. Moreover, greater convergence (to be discussed) in women's and men's use of time is the result of changes on the part of men as well as women. In general, the ratio of women's to men's time devoted to core housework activities decreased significantly because of increases in men's and decreases in women's time spent cooking and cleaning. The ratio of mother's to father's time spent on childcare also declined because the fathers' daily childcare time increased whereas the mothers' did not change significantly (Sullivan & Gershuny, 2013).

Technological advances, such as dishwashers, clothes dryers, microwaves, as well as pre-packaged food and increased eating out in restaurants, account for the reduction in total women's unpaid work time in the United States (J. Robinson & Godbey, 1997). It is also probable that what is established as an 'acceptable' level of unpaid work has changed, with studies showing that standards of housework have fallen since the mid-1970s in the USA (J. Robinson & Godbey, 1997; J. P. Robinson & Milkie, 1998). Nonetheless, the significant disinvestment in cooking and cleaning among women suggests that (some) women are resisting the normative definition of housework as essential 'women's work' by simply doing far less cooking and cleaning (J. P. Robinson & Milkie, 1998).

On the other hand, expectations that fathers will devote more time to children have also grown. In the USA, in the 1970s, there emerged an ideal of involved fatherhood that encouraged fathers to participate more intimately in the daily care of their children (Coltrane, 1996,(Pleck & Pleck, 1997; Sayer, Bianchi, & Robinson, 2004). There is some evidence that young men are taking jobs that offer flexibility and shorter work hours so they can meet family responsibilities (Carr, 2002).

Despite the widespread entry of women into the paid labour force during the 20th century and the pervasive diffusion of labour-saving home appliances with the new technology, there has been increasing evidence both of women spending less time on housework and of a complementary increase in men's contributions (Bianchi, 2000; Gershuny, 2018; Kan et al., 2011; Sullivan & Gershuny, 2013).

Recently, much attention has been focused on whether this gender transformation of paid and unpaid labour in society is forever changing or stable (Altintas & Sullivan, 2016). Although women have made great gains in the public sphere of employment over the past half century, on many fronts the progress in gender equality appears to be slowing (Altintas & Sullivan, 2016) .

Evidently, we cannot expect trends in the direction of greater gender equality to be either rapid or smooth in progression (Sullivan, 2006). Barriers of the kind identified by B. J. Risman (2004) may, for example, account for the recent slowing in men's contributions, and for the apparent recent stalling of the growth in women's labour market participation in the USA described in Cotter et al. (2005).

Men and women tend to undertake different types of domestic work. Women have been responsible for the bulk of routine housework and caring for others, while men tend to spend their domestic work time on non-routine tasks. There is evidence to show that the gender gap in routine housework is narrowing gradually. This finding is consistent with previous results from smaller groups of countries and shorter time-spans (e.g. Robinson and Godbey, 1997, Sullivan, 2000). Nevertheless, this narrowing is achieved mainly through a large reduction in women's routine housework time and a less substantial increase in men's.

Evidence shows that the gender segregation of domestic tasks remains a substantial barrier to further rapid gender convergence in domestic time use. The persistence of this segregation in the face of women's increasing time spent on paid employment over the past 40 years lends strong and direct support to gender theory. Domestic tasks remain divided as 'masculine'-defined and 'feminine'-defined, and these divisions do not appear particularly

susceptible to change even in countries where gender ideologies are considered to be relatively non-traditional (the Scandinavian countries). This suggests that gender ideologies and the interactional accomplishment of gender ('doing gender') according to normatively defined gender ideologies of masculinity and femininity remain a significant feature of the contemporary division of domestic labour, and that domestic gender equality will be most difficult to achieve in the feminine-defined areas of domestic work (Kan et al., 2011).

At the same time, the idea that women are working longer total hours than men has also been analysed by Hamermesh and Lee (2007), who began to document 'iso-work' patterns M. C. Burda, Hamermesh, and Weil (2008). M. Burda et al. (2013) analyse time diary data from 27 developed countries, suggesting that gender equality in total work holds in high-income and non-Catholic countries, dubbing this apparent phenomenon 'iso-work'. In M. C. Burda et al. (2008) the authors show a gender difference of 40 minutes per day in the time devoted to total work in Italy, and introduce the concept of 'social norms' as a coordination device between the total work of males and females (M. Burda et al., 2013; M. C. Burda et al., 2008).

Despite increases in female labour force participation, women continue to dedicate more time than men to unpaid work (Baxter, 2002; Bianchi, 2000; Bittman, Matheson, & Meagher, 1999; Gauthier, Smeeding, & Furstenberg Jr, 2004; Jose Ignacio Gimenez-Nadal & Sevilla, 2012) . As we have already mentioned, some of the previous literature has shown that, in several countries, women devote more time to total work than men (see Aguiar and Hurst (2007), for the case of the United States, and Jose Ignacio Gimenez-Nadal and Sevilla (2012), for those of Finland, France and the United Kingdom), resulting in women having less leisure time than men (Jose Ignacio Gimenez-Nadal & Sevilla-Sanz, 2011). On the other hand, more recently, M. Burda et al. (2013) , in their empirical analysis of gender differences in time devoted to total work for a pool of 27 developed countries, have showed a negative relationship between GDP per capita and gender differences in total work, and concluded that, as mentioned before, in rich non-Catholic countries, men and women average about the same amount of total work. To explain the gender gap in total work negatively affecting women in middle- and low-income Catholic countries—as is the case of Spain—, M. Burda et al. (2013) propose gender

norms. Other authors foster the development of social norms for the division of labour at household level (Álvarez & Miles, 2003; Bittman, England, Sayer, Folbre, & Matheson, 2003; Coltrane, 2000; Sevilla, Gimenez-Nadal, & Fernández, 2010), as well as of union formation (De Laat & Sevilla-Sanz, 2011; Jose Ignacio Gimenez-Nadal & Sevilla, 2012), and they consider that peer pressure to conform to a common social norm for time allocation leads to more similar time uses across individuals.

If we aim at testing iso-work, we also need to take into account the case study of Spain and its specificities, which are discussed in this work . Iso-work in Spain has been analysed by José Ignacio Giménez Nadal and Almudena Sevilla. They have found that Spain is a typical representative of the Mediterranean countries, characterised by the presence of rigid gender social norms (Jose Ignacio Gimenez-Nadal & Sevilla, 2012), very rigid labour market institutions that reinforce the male breadwinner model (Lewis, 2009), and a very limited public childcare sector for children under 3 years old (Jose Ignacio Gimenez-Nadal & Sevilla, 2014; Gutierrez-Domenech, 2005). As specified before, this thesis attempts to shed some light on the importance of the distribution of available time and to further the results of previous studies. In the third chapter we will analyse the Spanish case in more depth.

In the last article published by Oriel Sullivan and Jonathan Gershuny related to the matter (Gershuny, 2018), the authors study a 50-year sequence of nationally representative time-use data across 14 developed countries, which currently provides the longest perspective available on changes in the gender division of labour and care. Although it is clear that large gender gaps in unpaid work still exist, a long-term, cross-national vision indicates that the trend in the direction of greater gender equality in family work and care continues.

There may be some evidence of a slowing down over the recent decade in certain countries. The experience of the Scandinavian countries and the increasing participation of fathers in childcare indicate that much can still be achieved in the progress towards gender equality. A growing body of evidence lends support to this argument. First, those with higher education and the younger cohorts of men appear to be changing their behaviour more rapidly than others (Brooks & Bolzendahl, 2004; Lachance-Grzela & Bouchard, 2010). Second, there

appears to be a shift away from rigid gender specialisation in partnerships towards a more flexible, egalitarian model (Schwartz & Han, 2014). Finally, on the cross-national level, there are indications that more traditional countries are now moving faster in the direction of egalitarianism than countries where the gender equality revolution has progressed further (Esping-Andersen & Billari, 2015; Geist & Cohen, 2011; Sullivan, Billari, & Altintas, 2014). In contrast, there is no doubt that structural and ideological factors act to inhibit continuing convergence in domestic gender equality. More recent data and more complementary studies are nevertheless needed for a better understanding of international trends. The last chapter of this thesis presents a methodological proposal to enrich this framework.

Although studies on the distribution of leisure are limited, time-use researchers have examined historical trends to measure free/available time, indicating that average weekly free time in most Western societies has actually increased over time (Aguiar & Hurst, 2007; Gershuny, 2000; J. P. Robinson & Godbey, 1999). However, scant attention has been paid to the distribution of free time. The vast majority of research studies have thus far focused on work–family balance and the reconciliation of paid and unpaid work in working couples (Jacobs & Gerson, 2001; Warren, 2003), while clear analyses of inequalities in free time are less common (Bianchi & Mattingly, 2003; Bittman & Wajcman, 2000; Sayer, 2005).

As mentioned before, the institutional and political framework is of great importance. Studies carried out in Europe by Gálvez, Rodríguez-Modroño and Domínguez-Serrano (Lina Gálvez-Muñoz, Rodríguez-Modroño, & Domínguez-Serrano, 2011) suggest that cross-national comparisons show persistent patterns and differences in observed gender inequalities in total workload and care responsibilities. These authors analyse welfare regimes from a gender perspective to explore how different combinations in the provision of welfare between the state, the market, the family, and the civil society support different models of family and gender relations, as well as differences in gender time-use patterns.

In summary, scholars argue that additional convergence of women's and men's time use is unlikely to happen without changes in the institutional and normative context where decisions about time allocations are taken. Societal values and norms about how time should

be allocated and about which activities should be prioritised limit women's ability to autonomously determine how they will spend their time (Sayer, 2005). It is also important to mention that, in Europe and in other world regions, the austerity policies implemented following the economic crisis of 2008 have affected women's and men's participation in labour markets. Cuts in social and care services due to this promotion of austerity may turn the trend to a decline in women's participation and employment rates due to gender differences in education performance, with the subsequent loss in total well-being, especially for women (Lina Gálvez-Muñoz, 2013). Time-use data for this period are necessary to evaluate the impact of the economic crisis and the political response to it and also even more important as on this time we are getting the preliminary results on covid19 impacts.

2.3 Time poverty

Poverty is a frequent subject of social critics and social scientists alike (Haveman, 2009). The most common way of measuring poverty is through income, which in the first instance is very simple if we assume that for achieving certain levels of well-being we just need income (Harvey & Mukhopadhyay, 2007). The assumption that more money should lead to greater happiness demonstrates how market activities are considered an indicator of well-being (Folbre, 2004), something that many schools of thought are now reconsidering. Also, there is the conception of time as income, since it is the basic currency that allows people to pursue activities that increase their well-being. Time is inherently embedded in the mechanisms connecting economic status, health, or happiness or other outcomes, such as parental investments in the health and cognitive development of children, through physical activity, education and training. In addition to access to goods and services, one must have the time to pursue and consume them. In this work, we discuss that time should be considered a scarce resource to complement traditional poverty measures. Exploring the time dimension of poverty has the potential to provide a deeper understanding of poverty.

Time-use surveys conducted since 1960 in some industrialised economies and in most

countries since the 1990s allow researchers to calculate the percentage of time-poor women and men. Time poverty, when defined as a form of capability deprivation raises the question of to what extent our time reflects a choice or a lack of options. This paper focuses on individuals that work long hours in remunerated and non-remunerated work and do not have enough income for a 'decent' life or a '*bien vivir*' existence. In general terms, breaking this cycle of time and income requires the creation of decent employment opportunities, the provision of affordable care services, and the real share of responsibilities of unpaid work at the household level (Addati et al., 2018).

Feminist economists have long argued that the standard income-based poverty measures are inadequate because they do not include any monetising of the construction of household well-being through the unpaid work of household members (Benería et al., 2015).

In recent years, the measurement of poverty has been addressed in a complementary way. The traditional perspective on the concept, which had been understood only in terms of income, has been complemented. There have been many attempts to incorporate a multidimensional perspective to the phenomenon, beyond merely economic aspects. Thus, consideration of the *time factor* is an essential element, because it allows accounting for, first of all, those aspects that affect men and women differently and, secondly, for fundamental aspects of people's well-being that are not strictly related to their survival.

Time and money are two of the main constraints that people can have in their lives (Burchardt, 2008). Poverty studies are usually based on one-dimensional indicators of individual well-being, such as income or total expenditure. Including time in the indicators of poverty is the way to recognise that household and individuals need more than money to reach a minimum level of well-being.

The income-based conception of poverty has dominated the understanding, study and measurement of poverty over the last few decades. This conception understands poverty as a situation where people have low income and, as a result, their capacity to satisfy their needs is limited. There has always been some distrust in the relevance of income as a proxy for well-

being. This relevance has been associated with the predominance of economists in studying well-being and emphasising their main variable of interest. As a reasonable reaction following the prevalent disciplinary compartmentalisation of knowledge, other social scientists have aimed at reducing the importance of income in assessing people's well-being by introducing other variables—and dimensions—into the well-being equation (Rojas, 2011). Many economists who are concerned about ethical/social considerations in economics have also ended up choosing to classify people as poor on the basis of an expanded list of factors.

Over the past decade, time use and time scarcity have captured the attention of researchers, policymakers, and the general public (Lam, 2014). Interest in time use arises from several angles. Regardless of the term—time stress, time scarcity, time pressure, time constraints, or leisure inequality—, these scholars study subjective or objective time deficits and the resulting effects on economic, psychological, social, and physical well-being. Many authors assume that a certain level of leisure time is an implicit requirement for well-being, and that a deficit in leisure among those with excessive time allocated to paid and unpaid work has an important impact in their levels of well-being (Williams et al., 2016).

Interest among economists in the question of time use was stimulated by Becker (1965), who paid attention to the allocation of time to production-oriented and consumption-oriented activities in households. He suggested that resources should be measured by 'full income', meaning the income generated by a household fully dedicated to the objective of earning income (Becker, 1965). This assumption, which is in consonance with conventional economic theory, establishes that households are utility-maximising and that the time allocation chosen necessarily represents the best allocation for that household (Burchardt, 2008). However, Becker's framework has been criticised. (Folbre, 2004) has argued that Becker does not take into consideration the role of institutions affecting the context where household time allocation decisions are taken. These institutions include the structure of the labour market (flexibility, precariousness and gender discrimination), the availability of social services (childcare, elderly care), and cultural and social norms that have an enormous impact on how remunerated and non-remunerated work are distributed.

Folbre also criticises Becker's consideration of the household as a whole, and argues that the dynamics of household decision-making are complex, often including a combination of altruism, reciprocity, cooperation and conflict (Folbre, 1986). Thus, it is important to take the analysis at the individual level as far as possible, considering household time and income by individuals, rather than using the household as the only unit of analysis. This thesis work studies income and time at the individual level, although time and income poverty are considered separately rather than combined into a single concept of full income. However, we will attempt to explain some of the dynamics at household level, which are also crucial to understand the concept of time poverty.

Much of the related literature has sought to highlight the value of time spent in household production (Folbre, 2009). Any discussion of child rearing practices and related socioemotional health and educational outcomes automatically involves the time parents spend with their children recognising and moderating emotions, modelling health behaviours, etc. Time-poverty and time-use literatures have also frequently highlighted the dilemma of working parents, particularly single parents, who must balance paid and unpaid work time (Bittman, 2002; Douthitt, 2000; Vickery, 1977). At the same time, time poverty may negatively affect individual well-being by preventing individuals from participating in social activities, thus further marginalising their position in society (Williams et al., 2016).

More recently, research has suggested poverty, both in income and time, may result in poor decisions that exacerbate and extenuate one's state of deprivation (Mani, Mullainathan, Shafir, & Zhao, 2013). However, contrary to the abundance of income, excessive amounts of free time, as due to disability or unemployment, may not be valuable for creating well-being.

As mentioned before, in general terms, available time is time left over after carrying out committed activities such as paid work, unpaid work and personal care, but people could spend more time than it is strictly necessary doing these activities (Goodin, Rice, Bittman, & Saunders, 2005). Following the previous literature, this issue will also be taken into consideration in this study. Discretionary time is defined as the residue after the minimum necessary time has been dedicated to paid and unpaid work and personal care to get a certain

level of well-being or above a certain poverty line. While available time is defined as the time that is left over after time spent on personal care and paid and unpaid work and discretionary time measures the time that is left after what is considered the minimum necessary time spent on those activities. The minimum necessary time is defined as a social standard, for example, the minimum number of hours of paid work necessary to generate an income above an agreed poverty line, while the minimum necessary time devoted to unpaid work and personal care are defined in relation to population averages. In this sense, to define a minimum criterion we need to make some assumptions about what is the "minimum time" dedicated to certain activities that could be debateable that's why decided to focus on this work on the available time, that also have some limitations.

Furthermore, it may be important to consider both subjective and objective measures of time poverty to get the full picture (J. Robinson & Godbey, 1997), However, there are data and methodological limitations that hinder a deeper analysis of this topic. Ås (1978) already made a distinction between four kinds of time categories: a) necessary time: sleep, eating, personal care; b) contracted time: regular paid work; c) committed time: to perform some activities as a result of an earlier decision to do certain things (for example, having a family or having children); d) available time: after the above-mentioned activities have been performed. The boundaries between these four categories are not clear; however, the classification is useful in order to focus attention on time-use dynamics (Ås, 1978), which also change across different cultures and welfare states. Earlier decisions about undertaking education, having children, finding a place to live, have crucial consequences for the current range of possible time allocations (Gershuny & Sullivan, 2003). On the other hand, work intensity and the degree of autonomy to decide how to employ one's time are important, as well as the total number of hours dedicated to certain activities (Fagan, 2001), but these two variables are not easy to measure with the available time-use data.

Some studies measuring trends in available time over the 20th century have used different definitions, but their findings are until certain extent similar.

The time allocated by individuals to personal care, paid work and unpaid work is

influenced by an extensive range of limitations and choices. The real allocations of time and resources are explained by cultural, social and gender norms, as well as by preferences, the way decisions are taken, the degree of autonomy and the capacity to negotiate. For the case of Spain, Giménez Nadal and Sevilla have analysed iso-work using the Spanish time-use survey for 2009–2010, and they found no evidence of it. They concluded that the amount of time devoted to total work differs by gender, since Spanish women devote more time to total work than men, and, according to the authors, one of the main reasons for this are the social norms, which have a great influence on the division of labour.

Accordingly, individuals must decide how to allocate their time between four categories of activity: paid work, unpaid work, personal care, and the remainder, available time. These decisions are constrained in two ways: firstly, by the resources available; and, secondly, by the responsibilities of looking after oneself and others in terms of income, time, dedication, decisions, etc.

One of the challenges researchers must face when developing a time-poverty measure is categorising the activities to determine what counts towards an individual's time surplus or deficit. Many categories are not easily delineated into work and available time, and scholars have noted the difficulty of categorising activities (Harvey & Mukhopadhyay, 2007). Previous research has not been systematic in categorising activities, and this can create inconsistent definitions and headcounts of time poverty. It is clear that the exercise requires many assumptions, similar to those made when aggregating income sources to identify families experiencing income poverty. Most importantly, when defining time poverty, researchers should be transparent in how they categorise activities, and explicit about the logic and criteria used for making their decisions.

The educational level is one of the most important variables determining the 'exchange rate' between one's own time dedicated to certain activities and to others at the household level (Burchardt, 2010). Human capital is a crucial variable to determine the degree of autonomy that affects the way people distribute time and income at the household level. Furthermore, as mentioned before, social norms and institutions will also determine the power of negotiation

among household members.

Each allocation requires a different combination of available time and income. This set of possible or reasonable time–income combinations represents the individual's time and income capability. Some individuals enjoy a large capability set, with many options and autonomy to decide how to allocate their time. Other individuals have much more limited options to combine available time and disposable income, and it is even possible they have no options at all. Women often suffer from sleep deficit or are not able to go to paid work because they have many care responsibilities.

As we mentioned before, time-use studies have focused mainly on activities Szalai (1972) and have paid less attention to the constraints of supervisory responsibility imposed by the care of young children, individuals who are sick or disabled, or elderly adults.. For example, these studies omit supervisory activities or care, including time when children are sleeping. Work intensity due to overlapping activities or the presence of multiple activities is also a crucial aspect of the work process that has received little attention. The effect of work intensity likely depends on the level of effort that the activities require and the overlapping activities. Moreover, women generally tend to engage in more joint production than men (Maria Sagrario Floro, 1995; Maria Sagrario Floro & Miles, 2003), which also has an important impact on how to measure time poverty. The concept of time poverty and how it is measured will be analysed in greater depth in chapter 3.

3. Spanish time-use surveys

In this section, we will briefly review, albeit not exhaustively, the time-use studies conducted in Spain before the two largest surveys were carried out in 2002–2003 and 2009–2010 by the Instituto Nacional de Estadística (INE, National Statistics Institute), following the Eurostat guidelines. We will also review the main differences between this two INE surveys. Finally, we will discuss some of the results obtained from the analysis of secondary activities.

3.1 Overview of the Spanish time-use surveys

In Spain, two large institutions have carried out time-use surveys: the INE and the Centro de Investigaciones Sociales (CIS, Centre for Sociological Research) (María Ángeles Durán Heras & García Rogero, 2009). However, other organisations such as the Instituto de la Mujer (Women's Institute) of the Ministry of Labour and various institutes of different autonomous regions (NUTSII) like Catalonia, Andalusia and the Basque Country have conducted their own time-use surveys. Moreover other researchers have also administered surveys in certain geographical areas such as the metropolitan area of Barcelona (Vilà, 2013).

Among the first group, we can mention the Survey on New Demands and Social Needs (CSIC, 1990), the Survey on Relatives of Patients who use Emergency Services in Hospitals in Madrid (CSIC, 1994), the Survey on Unpaid Activities (CSIC, 1995, Durán Heras, 1997) and the Survey on Unpaid Work (1998). Surveys in provincial and local spheres have also been conducted, like the abovementioned survey of the metropolitan area of Barcelona (1980, 1990 and 1995) and its continuation, the Survey on Living Conditions and Habits of the Population (2000), as well as the Non-androcentric Active Population Survey (2000), which uses individual daily questionnaires to account for the activities performed by members of the household (Cristina Carrasco, 1991; Cristina Carrasco & Domínguez, 2003).

The history of Spanish time-use studies starts with the sporadic studies of the 1960s and 1970s and ends with the institutionalisation of statistics on the use of time by the INE at

the beginning of the 21st century (María Ángeles Durán Heras & García Rogero, 2009).

In Spain, the first empirical studies were carried out during the 1960s, a line of research that was boosted by Radio Television Española in the 1970s. It was not until the 1980s–1990s when various investigations attempted to delve deeper into the study of time and domestic work in Spain. Pioneers in this field were the Survey on Family and Domestic Inequality carried out by the CIS (Centre for Sociological Research) in 1984 and the various studies by Spanish researchers using data on time spent on domestic activities (María Ángeles Durán Heras, 1988; Izquierdo, Del Río, & Rodríguez, 1988; R. Ramos, 1990). In the 1990s, the number of studies and surveys collecting information on domestic activities and inequalities between women and men in terms of time spent on household and care work increased significantly.

Regarding the methods and techniques used by these studies, a large part of them were carried out through either surveys on the use of time or surveys on activities, although, as Duran (1985) points out, there is a whole set of alternative sources, ranging from participant observation to group discussion or in-depth interviews, which allow for deeper knowledge on the use of time, as we will highlight in the lasts section of this work.

There now follows a brief review of the main time-use surveys conducted in Spain since the 1990s that contain information about paid and unpaid work.

In the 1990s, the first time-use study presenting information on domestic work was the Encuesta sobre Nuevas Demandas Sociales (ENDS, Survey on New Social Demands) conducted by the Consejo Superior de Investigaciones Científicas (CSIC, Higher Council for Scientific Research) (CSIC, 1990). The objective was to identify the needs and attitudes of the surveyed population, with special attention given to health care tasks, especially in situations of illness and disability. From a methodological point of view, the most remarkable aspect of this study was the abundance of information on the reference persons, the reference time period and the care-related basic and specific activities included.

In the period 1990–1991, the Centro de Investigaciones de la Realidad Social (CIRES, Research Centre on Social Reality) carried out several investigations on the Spanish social

reality. Although the objective of this organisation was to provide data to the scientific community without further analysis, CIRES published several summaries of the results of its investigations (CIRES, 1991, 1992, 1993, 1994). In 1991, chapter 7 of its publication presented the results of its first time-use survey (CIRES, 1991), developed for a national sample of 1200 people over the age of 18 years. In this survey, as in the one conducted by the CSIC in 1990, there were questions about attitudes towards time and questions about activities. This study was somehow complemented in 1993 by the Survey on Family and Use of Time (CIRES, 1993), which also asked about the place where the activities were carried out.

In 1996, CIRES conducted its second Survey on the Use of Time (CIRES, 1996) using a basically identical questionnaire to that of the 1991 survey. Both surveys (CIRES 1991, 1996) allow a comparative analysis of the time-use data for Spain. Referring to methodology, the most innovative aspect of the CIRES surveys compared to that of the CSIC is that they collected information on the time of execution of the activities on weekdays and during the weekend. This distinction is fundamental for limiting the times and activities considered as domestic work, as well as for identifying inequalities by gender with respect to available time. It must be specified that the objective of these surveys was to determine how people spend their time in general terms and not specifically on paid and unpaid work.

In 1995, a Survey on Unpaid Activities was carried out (1200 interviews with people over 18 years of age) as part of a project directed by Durán, financed by the Comisión Interministerial de Ciencia y Tecnología (CICYT, Interministerial Commission on Science and Technology) and entitled 'Trabajo no remunerado. Bases para un análisis comparativo internacional' ('Unpaid work. Bases for an international comparative analysis') (CSIC, 1995). This survey of activities collected information on the time devoted to each activity on the last working day. What makes this survey very different is the objective, which highlighted the importance of collecting data on care work activities (María Ángeles Durán Heras, 1997). In this sense, the questionnaire offered a vision of domestic work as consisting less of 'concrete activities' (such as preparing food, cleaning, etc.) and more of management activities, related to the preparation of family consumption or to care for the elderly or sick in addition to

childcare, giving affection to members of the family, etc.

An additional study on time use with an interesting approach was conducted by the IOÉ Collective in 1996. It was published by the Women's Institute under the title: *Tiempo social contra reloj. Las mujeres y la transformación en los usos del tiempo* (*Social time against the clock. Women and the transformation of the uses of time*) (Ioé, Pereda, Actis, & de Prada, 1996). One of the main concerns of this research was to determine the way time is organised in current societies, with special attention given to the place that women occupy in relation to the clock of social work, especially those 'who have to face a situation of' double shifts. The authors based the study on, first of all, the analysis of empirical data on work (employment and domestic work) drawn from the existing sources, and, secondly, on field work, with the conduction of ten focus groups and the administration of a survey to women aged 16 to 65 years including questions about their activities and attitudes. The most interesting aspect of this project was its approach, a vision of working time in which the interrelation between times of activity (paid and unpaid) was structured—through class and gender differences—to relate the social use of time to the rhythm marked by paid activity.

There are other studies carried out at the regional level, such as the one entitled 'Gender and uses of time in Andalusia', an investigation commissioned by the Andalusian Women's Institute to analyse the time that women and men devote to domestic work, extra-domestic work and leisure activities (M. D. Ramos & Romo, 1998). In Madrid, the study 'Unpaid work in the domestic sphere in the Community of Madrid' (CSIC, 1998) was conducted with the main objective of measuring and assessing the volume of unpaid work by occupations and quantifying the distribution of the total workload among the members of the family, especially between women and men.

As mentioned before, no national survey was carried out in Spain until October 2003. A team led by María Ángeles Durán conducted a project that included time use in the analysis of the social and economic structure, in fact a CSIC study (2003–2005) that comprised a survey of the whole country. The main objective of the project was to obtain information on changes regarding the performance of unpaid work, observing time distribution by activity, sex, age,

educational level, family and work status. The activities included were not hierarchically arranged, but subdivided into professional work, studies, volunteer work and domestic tasks, the latter being the main focus of the study. The interviewees were also asked to evaluate the economic and social prestige of domestic workers.

On the other hand, the INE (National Statistics Institute) performed a pilot study following the criteria defined by the study groups that were designing surveys at the European level in the years 1995–1996, but the final application of the survey did not occur until 2002–2003.

In that sense, the definitive institutionalisation of studies on the use of time in Spain is associated with the publication of the Encuesta de Empleo del Tiempo 2002–2003 (2002–2003 Time-Use Survey) carried out by the INE. For the first time, the HETUS methodology (Eurostat) was implemented in a Spanish survey. Most previous studies were based on questionnaires or simple diaries called 'activity surveys', which are used when resources are limited or the study focuses on a specific topic. The present thesis work focuses on the study of the two surveys carried out under the HETUS mandates in 2002–2003 and 2009–2010.

At the beginning, we planned to include the upcoming Spanish survey (2014–2015) in this thesis, but due to the economic crisis and the INE's argument that 'there is not enough demand for time-use survey studies' the survey has finally not been implemented.

3.2 Evolution of time use in Spain

For the purpose of determining the evolution of time use in Spain in recent years, the different studies cannot be compared as they do not always use the same data sources or the same methodology. However, our aim is not to be exhaustive, only to get and present an overview of the trends of time use in Spain during this period. We follow the work developed by Estrella López, which examines the different time uses of men and women in Spain, analysing the various time-use studies (López, 2013).

In 1986, the year in which María Ángeles Durán published her work *La Jornada Interminable* (*The Endless Day*) (M. A. Durán Heras, 1986), most women's time was dedicated to the production of services within the family unit, and their participation in the labour market was very low. Durán defined two situations. On the first one, men responded to a model characterised by the low production of domestic services, a consumption of medium-high value products, and a high economic contribution to the family system that was, in fact, the only or at least the main source of income. On the contrary, the female model was characterised by a high production of services for the whole family and a low consumption level—they consumed much less than they produced. Not taking into account women over 65 years, the average homemaker's day was 11.5 hours long, exceeding the amount of 80 hours per week. In addition, the author stressed that reproductive work was characterised by a combination of personal and affective aspects and performed throughout people's lifetime. While men's work was conceived as an upward long-term project, individualised and culminating in retirement, women's was a collective project that included their family and did not finish until old age or infirmity.

In later years, the studies conducted by Izquierdo et al. (1988), María Ángeles María Ángeles Durán Heras (1988), Cristina Carrasco (1991) and other authors have highlighted the main role of the gender variable in determining the distribution of time. R. Ramos (1990) stated that the main difference was gender, as women dedicated many more hours per day to domestic work than men (89% of the total time devoted to these chores); in contrast, men devoted more time to professional and academic work (double the time of women). The difference in leisure time was significantly in favour of men. It is also worth noting that, while the differences in the use of time between married and single men were small, there was a clear divergence between women depending on their marital status. Single women spent almost three times as many hours on academic and professional activities and over one hour more on leisure than married women. By contrast, married women spent much more time on domestic and family work (about four hours more).

Mariano Álvaro Page (1996) also highlighted that the greatest differences by gender in the use of time were in domestic work. The time devoted by women to these tasks was more than three times that of men, and this difference stemmed fundamentally from the time spent on housework (almost five hours compared to thirty minutes for men). As R. Ramos (1990) had already reported, men dedicated much more time to paid work and had more free time. Álvaro (Page, 1996) also studied the influence of other variables, the most notable of which was the level of studies, finding that the higher the educational level, the more time was devoted to paid work and leisure, and the lower the level, the more time was used in domestic and care work.

In 2001, Eduardo Raldúa presented the results of the study in which he compared the uses of time by gender in 22 countries. Considering the total time devoted to work (the sum of paid and unpaid work time), he observed that, in most countries, women worked more hours per week than men, and that the greatest difference was found in Spain, where the difference exceeded 12 hours per week. In all countries, unpaid work was a field reserved for women, as paid work was for men, with Spain again situated among the countries with the greatest differences (women devoted over 29 hours per week more than men to unpaid work). In addition, Raldúa added that this unequal distribution of productive and reproductive work produced a new inequality in the use of free time: in Spain, men spent more than 12 weekly hours more than women on activities meant to satisfy their basic needs and in leisure (Martín, 2001).

The studies carried out by Durán (María Ángeles Durán Heras, 1997; María Ángeles Durán Heras, 2005) corroborated this. Durán (2005) emphasised that 'the incorporation of women into paid work does not usually free them from being the main person responsible for unpaid work in their homes', which implied that 'part of the weekly tasks were poorly accomplished or not accomplished at all, [...] they occupy the time that, theoretically, is devoted to rest'. The author also compared the uses of time in a number of European countries, using data corresponding to the years 2002 and 2003. Like Raldúa (2001), Durán concluded that

Spain was among the countries with greater inequality in the distribution of unpaid work (women spent over three hours per day more than men on this kind of work). More recent studies using the 2002–2003 Time-Use Survey data have shown that Spain has one of the largest gender gaps in time use (Lina Gálvez-Muñoz et al., 2011).

In conclusion, the review of all these studies demonstrates how the uses of time by men and women have been modified over time, and that, despite the differences having been reduced, these continue to be greater than we might expect or than what would be desirable. Thus, the pattern of acquiring responsibilities in Spain continues to differ by gender. Men have not been incorporated into domestic work in the same way as women have into the labour market (López, 2013), a fact with important implications for time poverty that will be analysed in the next chapter.

3.3 Time-use surveys in Spain

To study Spanish time-use data, we will focus on the two harmonised surveys of 2002–2003 and 2009–2010 that followed the Eurostat guidelines. In general terms, the data drawn from Spanish time-use surveys indicate that the distribution of care work between men and women has continued to be highly unequal at the aggregate level. This is so even though men have slightly increased the time spent on care work, with the main increase being in childcare, thus reflecting, as discussed in the previous section, some changes in family norms and gender stereotypes that include a marginal convergence of men's and women's unpaid work.

According to the INE (National Statistics Institute), the main objective of this survey was to obtain primary information to ascertain the amount of unpaid work carried out by households, the distribution of family responsibilities within the household, the participation of the population in cultural and recreational activities, the time use of certain social groups (the young, the unemployed, etc.), all for the purpose of facilitating family and gender-equality policies and estimating the satellite accounts of the household sector(Instituto Nacional de Estadística INE, 2004).

This work explores in greater detail the two time-use datasets drawn from the 2002–2003 and 2009–2010 Spanish Time-Use Surveys (STUS). They contain information gathered from persons aged 10 years and over who filled out a diary of activities. They include household data and other individual variables related to the respondents, such as sex, age, educational level, marital status, relationships, economic activity and professional situation, occupation, level of income and type of household in which they live, etc. (Instituto Nacional de Estadística INE, 2004; Instituto Nacional de Estadistica INE, 2011).

According to the INE, the sample size of the 2002–2003 STUS was 23,880 homes, decreasing to 11,166 units in the 2009–2010 STUS. Due to the high cost of the 2002–2003 survey, and considering that the results obtained for two of the year's quarters in the 2002–2003 survey were very similar to those obtained for the whole year (with the exception of leisure and free time activities, the information of which was collected in holiday periods), the INE decided that half of the sample would be enough to obtain results of satisfactory quality for the new period, especially at national level. A regional level analysis is more difficult, as will be later explained. The household questionnaire was also reduced by four pages, from twelve to eight, while the individual questionnaire was reduced by ten pages. (The diary, the household and the individual questionnaire can be found in Appendix 1.)

In this study, the focus is mainly on the 2009–2010 STUS for two reasons. First, the results are very similar to those of the 2002–2003 STUS, and, second, the dataset is more recent. This dataset corresponded to 19,295 persons aged 10 years and over, who filled out a diary of activities on a previously specified day of the week, throughout the last quarter of 2009 and the first quarter of 2010. In order to represent every day of the year, on a stratum and autonomous region level, the sample was distributed uniformly throughout.

The activity diary is the most characteristic tool of the survey. All household members aged 10 years and over had to fill it out on a selected day. The diary time sheet covered 24 consecutive hours, from 6 a.m. to 6 a.m. the following day, and was divided into 10-minute intervals. In each of them, the informants had to write down their main activity, any secondary activity performed at the same time, and the place they were at the time, whether they were

alone or accompanied by other persons at the time, and whether or not they used a computer or the Internet in the activities described. These activities were encoded according to a harmonised list from Eurostat, which considered ten large groups of activities: personal care, paid work, studies, household and family care, volunteer work and meetings, social life and recreation, sports and outdoor activities, hobbies and computer games, communication, and travel and unspecified time use. For greater detail, see the list of activities on Appendix 2.

3.2.1 How are Spanish data collected?

The list of activities is the basic element of time-use surveys. The codes and activities included in the list is important in determining the kind of data that is obtained from the information contained in the activity diaries. For example, if an activity is not included or if the list is not specific enough, the respondents may have problems to identify the activities. Thus, it is of great importance that the list of activities is well defined, and we will come back to this issue in the last chapter of this work.

The harmonised list of activities used in the 2009–2010 STUS is based on the Eurostat classification. The final development of the harmonised Eurostat list of activities was reached with a maximum breakdown level of three digits. It is important to highlight that the classification is not an ordinary one, but rather a harmonised coding system that can be used in European time-use surveys and be flexibly implemented and restructured in many other reports, classifications and analyses. The flexibility of the proposed classification also allows additional codes to be introduced in accordance with regional and local needs (Instituto Nacional de Estadística INE, 2004). However, the survey was adapted to a four-digit code, as explained in the next paragraph.

The coding system of the Spanish harmonised list of activities proposed four scales in relation to what happened in each period of time defined in the activity diary. According to the INE, these four scales were: the main activity or the one mainly carried out by the informant during the period in question; the secondary activity, or the one carried out by the informant

simultaneously during the time period considered if more than one activity was performed; the person/s accompanying the informant while they carried out the activity; and the place where the activity was undertaken.

The classification of the activities follows the hierarchical order proposed by Dagfinn (Ås, 1978):

1) time required (personal care);
2) time contracted (paid work and studies);
3) time committed to other personal activities (domestic tasks);
4) free time.

This hierarchical order will be discussed at the end of this work, because the way the activities in it are classified determines the relative importance of each activity. The classification and definition of the activities is not a minor issue and should be considered carefully.

The development of this order of activities gives rise to the definition of the main activity, which is subdivided into 10 large groups:

Table 1: Classification of main activities

Activities.	Two digits	Three digits
0. Personal care	3	10
1. Paid work	3	11
2. Studies	2	6
3. Household and family care	9	43
4. Voluntary work and meetings	3	19
5. Social life and recreation	3	15
6. Sports and outdoor activities	3	15
7. Hobbies and computer games	3	22
8. Communication	3	11
9. Travel and unspecified time use	0	24

Source: INE, the author.

As seen on Table 1, Classification of main activities the group of activities corresponding to household and family care has the greatest breakdown and is acknowledged as having the capacity to evaluate the activities at the household level (INE). However, in our view, this could be improved. In terms of the main activity classification structure, there are 176 human activities that are considered three-digit activities and that define what a person can do as a main activity over a period of time. Four-digit codes are also assigned to activities that are delimited at a higher level than the three-digit level, or to specific national activities within

the common hierarchical system of proposed three-digit activities for the general framework of EU countries in the Eurostat harmonised list (EUROSTAT, 2008). Again, four digits are also necessary to capture specific activities related to care.

A shorter classification is defined for secondary activities, containing 12 general activities considered very common and possible to carry out at the same time as the main activity (see Appendix 2). The place coding allows a simplification of the main activity coding, meaning that it is not necessary to introduce different codes to identify the same activity carried out in different places. Including the means of transport in the place code also reduces the number of codes required for the main activity. Furthermore, this criterion adapts well to the place code content. The list of places is made up of a list of two-digit codes for 29 places and means of transport (see the Appendix 2). The 'with whom' code has been introduced with the aim of obtaining data on time spent with children (INE), which is important in care-related activities.

In general, three visits were carried out in each survey. The first visit took place during the working day prior to the date of completion of the working day diary. During this visit, attempts were made to contact all dwellings in the section to complete the household questionnaire and the individual questionnaires, and to deliver the diaries for self-completion by the informants. The second visit took place during the working day subsequent to the date of completion of the working day diary. During this visit, the questionnaires and diaries were collected from the households—the diaries should have been completed the day before (working day group)—, and attempts were again made to contact those homes where the first visit had not been possible. The third visit took place during the working day subsequent to the date of completion of the weekend day diary. During this visit, the questionnaires and diaries were collected from the homes that should have completed the diaries on the previous day (weekend day group), and the questionnaires and diaries from the weekday diary homes that might have been pending collection since the previous visit. Only if diaries had been postponed were new visits made to the section (generally on the day following completion of the diary), up to a maximum of five(Instituto Nacional de Estadística INE, 2004).

With regard to the collection of the diary, it is important that the visit is carried out as close as possible to the day on which the diary is completed. If the household questionnaire could not be completed during the previous interview, it is done during this visit, once a suitable time has been arranged to interview a household member who is able to provide information on the structure, living conditions and budget of the household. This visit includes the collection and review of the diaries and the individual questionnaires, which should have been left for self-completion, as well as the resolution of any queries. Any inconsistencies detected in the diary are corrected and the corresponding information requested (INE (Instituto Nacional de Estadística INE, 2004)).

The 2009–2010 Spanish time-use survey (STUS) provided a large representative sample with a high general response rate (86%). Respondents filled out either a weekday diary (67%) or a weekend diary (33%).

In summary, the STUS was based on four main instruments:

- The individual questionnaire. The previous week, Monday to Sunday, was taken as reference period.

- The activity diary. The reference period was the 24 hours of a day, divided into 10-minute periods.

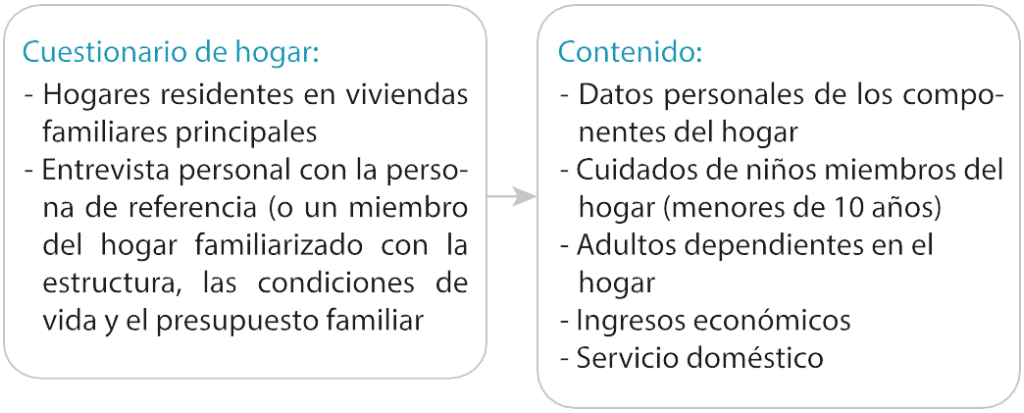
- The household questionnaire, which was completed by the reference person.

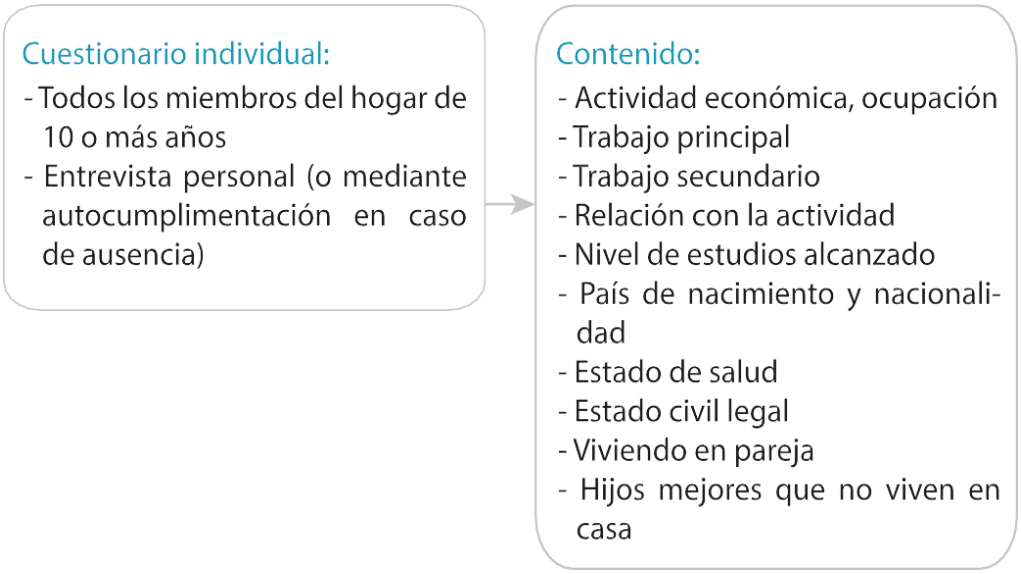
- In the remunerated work schedule, a week is taken as reference period, matching the seventh day of the week with the day on which the activity diary must be completed.

This work focuses on the first three instruments. The remunerated work schedule is not analysed, as we use the diary as the main tool for measuring paid and unpaid work. Appendix 1 includes the original questionnaire and diaries used to collect the data.

The figure below shows detailed information on what is included in each instrument.

Figure 3: Collection tools and content





Source: INE

Although the dataset includes secondary activities, which are defined as the activities carried out at the same time as the main one, we will use the main activity declared by the respondent as the main source for our study. However, a descriptive analysis will be conducted of the secondary activities, and of the implications derived from the definition of each activity and how primary and secondary activities are distributed. The last section of this work also analyses the limitations in collecting data for a secondary activity dataset and the gender bias that may emerge from it.

3.4 Review of the methodology of the two most recent Spanish surveys

This subsection analyses the main changes implemented in the 2009–2010 Spanish Time-Use Survey, compared to the 2002–2003 survey, following the indications of the INE (National Statistics Institute).

As mentioned before, the most important change is the decrease in the size of the sample

from 23,880 homes to 11,166 units, according to the INE, due to the high cost of the 2002–2003 survey. The INE also observed that the results obtained for two quarters of the year in 2002–2003 were very similar to those obtained for the whole year. All these circumstances led the INE to consider that half of the sample would be enough to obtain satisfactory quality results, mainly at national level. However, this choice implied some limitations, including the fact that only very basic results could be obtained for the autonomous regions. Our intention in this work was to perform a more detailed study by region, but this has not been possible due to the sample size.

In addition, the list of the main three-digit activities was reduced from 177 to 115, and the codes from the list of main activities were also used for the classification of the secondary activities. In the 2002–2003 survey, the list of secondary activities consisted of 16 codes.

Moreover, both for the main activities and for the secondary activities, a code was established to determine whether these activities were carried out using the internet. In the present study, this information has not been used, but we believe it is crucial for future analyses, especially for studying multitasking and time stress related to the feeling of being constantly connected.

The 'place code' simplifies the coding of the main activity, making it unnecessary to introduce different codes to identify the same activity carried out in different places. The inclusion of the means of transport in the place code also reduces the number of codes required for the main activity. In addition, this criterion adapts well to the content of the place code. The list of places is composed of two-digit codes for 17 places and means of transport. In the 2002–2003 survey, the place was implicit in the main activities, but the lack of specificity of the responses led to poorer results than *a priori* expected. Thus, in the 2009–2010 survey a specific column for place was included, making possible a deeper analysis of the place where the activities are carried out (INE).

According to the INE, the 'with whom' code was introduced with the main objective of gathering data on time spent with children. From this perspective, this variable is broadly

defined and should be understood in the sense of ‘being together’, rather than in the more limited one of ‘doing together’. This is very important in relation to care, because of the need to ‘be around’ or to supervise children’s activities. This variable also facilitates the classification of unspecified actions.

We will now review the major changes implemented in the main instruments of the second survey, compared to the first one (Instituto Nacional de Estadística INE, 2004; Instituto Nacional de Estadistica INE, 2011).

3.4.1 Household questionnaire

The main differences between the household questionnaire used in the 2009–2010 survey and the one used in the 2002–2003 survey can be summarised as follows:

- This crucial information was deleted:

  - Characteristics of the main dwelling

  - Household equipment

  - Cultivation of kitchen gardens and care of animals

  - Help received by the household

The last item is specifically related to care activities on the household level, and might help understand how non-remunerated work is divided on that level and what kind of external help the household is making use of.

- There was less information on:

  - Childcare

- There was more information on:

  - Domestic service

  - Dependent adults in the household

In the 2009–2010 survey, a complete module was added with information on domestic service available to the household, in order to obtain an estimate of the personnel employed in these activities and their remuneration, both in cash and in kind.

3.4.2 Individual questionnaire

The differences between the 2002–2003 and the 2009–2010 questionnaires are summarised hereunder (Instituto Nacional de Estadística INE, 2004; Instituto Nacional de Estadistica INE, 2011).

- This crucial information was deleted:

  - Job search

  - Help provided to other households

  - Volunteer activities

  - Cultural and leisure activities

  - Sports activities

  - Social life

- There is less information on:

  - Education

  - Health condition

- There is more information on:

  - Living together as a couple

  - Children under 18 who do not live in the household

Some adjustments were also made due to certain contradictory information recorded in the diaries, probably caused by the use of different reference periods.

3.4.3 Diaries

The main differences in the section dedicated to the list of activities have already been discussed. However, these can be summarised as follows:

- There was more information on:

  - Secondary activities

  - The person who accompanied the informant while performing the activity

- Explicit information was requested on:

  - The place where the activity was performed

  - The activities carried out using the internet

In brief, we can say that the important reduction of the sample size implied a reduction in the information on related care activities and in some qualitative questions, thus diminishing as well the qualitative and quantitative information provided by the time-use survey. The next subsection includes descriptive statistic of the changes in time use in Spain reflected in the time-use surveys.

3.4.4 Changes in time use in Spain between 2002–2003 and 2009–2010

This section analyses the main general differences in time use between 2002–2003 and 2009–2010, taking into consideration only descriptive statistics,

According to the results published by the INE participation in social life and recreational activities decreased between the two periods. A total of 57.7% of the respondents carried out this kind of activities in 2009–2010, which is nine points below the percentage in 2003. The time spent on computers increased, with 30% of the respondents spending time on hobbies and computer games, as compared with 17.9% in 2003. As already mentioned, women as a group dedicate more hours to household chores than men. However, between 2003 and

2009, men had reduced this difference by 41 minutes.

The differences in time use between men and women continued to be significant. Although women's participation in paid work increased by three points, and that of men decreased by four points, there was still a 10-point difference between male and female participation in this activity (38.7% and 28.2%, respectively). Moreover, the average daily time spent by men on paid work exceeded that spent by women by more than one hour. In contrast, although male participation in household activities increased in the intervening years by almost five points, and the percentage of women dedicated to household activities decreased less than one point, there was still a difference of 17 percentage points in participation in unpaid work (74.7% for men and 91.9% for women).

The difference in the average time spent by men and women on household activities also decreased by more than 30 minutes, but the time devoted to it by women was still almost two hours more than that devoted by men. Moreover, there was a difference of more than five points between the participation of women and men in volunteer tasks and help given to other households, which should also be considered.

Persons aged 65 years and over had the most free time, almost seven hours, more than four of which were dedicated to the media and to watching TV. Young persons and older persons were those who enjoyed the most time on social life and recreational activities—1 hour and 24 minutes, and 1 hour and 12 minutes, respectively, compared with 55 minutes for the remaining groups. This will be reflected in the measurement of time poverty in the following chapter.

If we look at the daily routines, they were measured through the percentage of persons who carried out the same main activity at the same time of the day. It was observed that, from Monday to Thursday, from early morning to 2 p.m., the activity with the greatest participation was paid work, which peaked higher than 30% between 10 a.m. and 12 p.m. This was followed by household responsibilities with levels above 25% between 11 a.m. and 1 p.m. Free-time activities were carried out by a marginally lower percentage than the previous activities,

reaching their maximum between 12 p.m. and 1 p.m. In contrast, from Friday to Sunday, the main activity performed in the morning was related to household activities, the maximum levels of which were reached between 11 a.m. and 1 p.m., with a participation above 30%. In the same period of time, the second most frequent activity was related to free time, with a maximum beyond 25% at 1 p.m. In the afternoon, there was a majority of free-time activities any day of the week, while on working days singles had participation percentages above 45% at 11 p.m. On weekend afternoons, a significant decrease was also observed in the percentage of persons who carried out paid work. Study was an activity the rate of which decreased by 50% on weekends in comparison with working days (INE).

3.4.4.1 Time-use studies in Spain using the latest time-use surveys

With regard to studies following the most recent two Eurostat-based Spanish time-use surveys (2002–2003 and 2009–2010), we find various kinds. Most of them focus on unpaid work, gender roles and the division of unpaid work in Spanish households, and the valuation of the latter. However, there are studies on time spent on cultural activities by salaried or self-employed individuals, using the data of the 2009–2010 survey. There are also studies looking at the regional differences in time use, analysing the relationship between the time allocation decisions of the unemployed, by gender, and regional unemployment rates.

A non-exhaustive review of some of the studies carried out using data of the two Spanish time-use surveys (STUS) is presented in the next paragraphs.

One of those studies analysed cultural participation and differences in the form of participation in the various activities in Spain through an empirical exercise with data drawn from the 2002–2003 STUS; the results showed the relevance of education and income (Ateca-Amestoy, 2010). Another article analysed time devoted to reading, watching TV and listening to the radio using 2009–2010 STUS data. The results revealed that being self-employed has a negative and significant effect on the time dedicated to reading and watching TV, and being male has an influence on the time spent watching TV and listening to the radio, in a statistically

significant and positive way. Additionally, older individuals and those with a higher level of education spend more time reading, while those with lower levels prefer watching TV. Adults with better health spend less time reading and watching TV, and families with larger numbers of children up to age 5 tend to spend less time on all three at-home leisure activities. Finally, authors also point to the fact that living in a larger city has a positive effect on the time dedicated to the TV, radio and reading options (Molina, Campaña, & Ortega, 2016).

There are studies that look at the relationship between health status and the time devoted to both market and non-remunerated work using the 2002–2003 STUS data. The authors find that the better health of individuals is associated with an increase in the hours of market work, and a reduction in the time devoted to nonmarket work (J Ignacio Gimenez-Nadal & Ortega-Lapiedra, 2013).

Some studies on eating habits using the two Spanish surveys have analysed the time dedicated to eating and cooking in Spain and the United Kingdom. The authors examine whether different social groups behave similarly with regard to the time spent eating, and the extent to which changes affect some groups more than others, generating greater social differences (Díaz-Méndez & García-Espejo, 2014).

As regards the labour market, self-employment is viewed as allowing the individual greater autonomy and more flexible hours, which may reduce time stress. The authors analyse the time stress of this population in relation to that of the employed, using 2002–2003 STUS data and finding that, when objective indicators of time allocation are included, being self-employed increases the time stress perceived by men in both quantity and quality (José Ignacio Gimenez-Nadal & Ortega-Lapiedra, 2010).

Additionally, looking at the labour market, unemployment and regional differences, there is another study that, using 2002–2003 STUS data, concludes that the unemployed devote most of the reduced market time to additional leisure, and only a small proportion of time is spent on household production activities. However, the authors also found that the relationship between market work and household production and unemployment depends on regional

unemployment rates, because in areas where those rates are high, reduced market work is transformed into additional time spent in household production (J Ignacio Gimenez-Nadal & Molina, 2014).

Also looking at regional differences, some authors analyse the relationship between the time allocation decisions of the unemployed, by gender, and the different regional unemployment rates. Using two cross-sections from the 2002–2003 and 2009–2010 STUS data, they find that higher regional unemployment rates are associated with increases in the time devoted to study among men. Authors also point out that regional unemployment rates are associated with more time spent on household production, particularly among unemployed men and women living in a couple, and to less time devoted to leisure, particularly among unemployed men with a working partner and unemployed women not living in a couple. Higher regional unemployment rates imply a lower availability of jobs for the unemployed, reducing individual expectations of finding a job. Consequently, people may try to increase their time spent on household production to reduce market expenditures and thus keep their consumption constant (J Ignacio Gimenez-Nadal & Molina, 2014).

With the focus still on unemployment rates, there is a study that analyses the implications of unemployment for the combination of consumption expenditures and time use within households. As time is less scarce, we expect that unemployed workers will spend more time in the production of commodities, which are relatively time-intensive. Time-intensive commodities—passive leisure, active leisure, housework, and childcare—are produced to a greater extent in households with unemployed individuals. The authors also find that—with the exception of single females—the proportion of consumption expenditures in time-saving goods is lower in households with unemployed individuals (Ahn, Jimeno, & Ugidos, 2003).

On the other hand, using the capabilities approach together with time-use data is very useful when authors analyse gender differences in children's well-being. There is a study that focuses on the analysis of well-being through four capabilities: social relations, education and knowledge, leisure and play activities, and domestic and care work. The results point out that labour market behaviour by gender is not only related to human capital formation, family

conditions or labour market opportunities, but also to children's well-being. Furthermore, gender stereotypes continue influencing the development of children's capabilities during their process of socialisation (Rodríguez-Modroño, Gálvez-Muñoz, Matus-López, & Domínguez-Serrano, 2013). Also using the capabilities approach, these authors analyse and measure gender differences in children and adolescents' well-being and identify the parameters that can help design policies to improve it. The results show that parental working time, both paid and unpaid, is a determinant of children's well-being. Gender differences are also very significant (Gálvez-Muñoz, Domínguez-Serrano, Rodríguez-Modroño, & Matus-López, 2013).

Based on 2002–2003 STUS data, another study shows how fathers with different levels of education adjust their parenting activities to their children's developmental needs. The authors find that in couples where the youngest child is aged 3–5 years, a developmental stage in which cognitive development critically depends on the parents' intellectual stimulation, education is significantly correlated with the father's interactive care, especially in teaching activities. In addition, they concluded that mothers' employment had a strong positive effect on fathers' physical care in families with children under school age, when these activities are central for gender equality in the home (Garcia-Roman & Gracia, 2016).

There are studies that use 2002–2003 STUS data to look at couple dynamics and analyse how work schedules are associated with family, couple, parent-child and non-family leisure activities. The results show strong negative associations between the split shift and both family and parent-child activities. The evening shift is negatively associated with couple and family time, but not with parent-child time. Women spend much more time than men in parent-child activities for all work categories, and they are more responsive to the spouse's work hours. Men are substantially more active than women in non-family leisure, considering both the individual's and their spouse's work schedules. Altogether, this study has important implications for scientific and public policy debates (Garcia-Roman & Gracia, 2016; Gracia & Kalmijn, 2016).

Following the same idea and using as well time-use data from the 2002–2003 STUS, another work studies whether the allocation of childcare time differs across gender, parental

employment and other characteristics in Spain. The results show that mothers provide substantially more care in relation to essential needs and activities, as well as secondary childcare, than fathers, but the care associated with educational activities is similar. The paper also shows that fathers and mothers in employment spend more time on educational activities than their unemployed counterparts, and that parental education generally increases childcare to cover essential needs and perform educational activities. Finally, the study suggests that ending the working day not later than 6 p.m. would significantly increment the time allocated to childcare by working parents (Gutiérrez-Domenech, 2010).

Focused on gender norms and using Harmonised European Time Use Surves (HETUS) (EUROSTAT, 2008) data, including Spanish data, another study shows how care work taking place outside the marketplace represents an essential and distinctive part of national economies. The authors carry out cross-national comparisons and show persistent patterns and differences in observed gender inequalities on total workload and care responsibilities. One of the main findings is that including time use in gendered analyses of welfare regimes reveals how unpaid care work is at the core of gender inequality in all countries (Lina Gálvez-Muñoz et al., 2011).

In the same vein and using detailed time-use data from the 2002–2003 and 2009–2010 STUS, there is a study where the authors analyse changes in the time allocation decisions of the Spanish population, with a focus on time devoted to total work. As mentioned before, women devote more time to total work than men, and this difference has increased throughout the period studied by two hours per week, a fact that we will discuss in the next section. According to the authors, the relative increase in total work for women compared with men can be explained by a relative increase in market work of eight hours per week, coupled with a relative decrease in non-market work of six hours per week, which have led Spanish women to enjoy two leisure hours less per week in 2009–2010, compared with 2002–2003 (Jose Ignacio Gimenez-Nadal & Sevilla, 2014).

Again, this section does not pretend to be an exhaustive literature review, but only to present the main studies using data drawn from the Spanish harmonised time-use surveys.

3.5 Secondary activities

This section analyses uses of time by men and women when secondary activities are considered, because the differences in paid work between men and women are even greater. Its objective is to shed more light on the importance of unpaid work performed by women and when taking into consideration secondary activities.

3.5.1 Theoretical background

The overlapping of activities is an important dimension of time use that has previously received little attention in economic analysis. Most time-use studies have looked only at primary activities, ignoring the fact that individuals often perform two or more activities simultaneously (María Sagrario Floro & Miles, 2001). The analysis of overlapping activities—those secondary and tertiary activities that are performed at the same time as the primary ones—is now given greater attention in economic, social and policy analyses (María Sagrario Floro & Miles, 2001).

The tendency to overlap may have potential benefits in terms of increased individual productivity, or represent the intensification of work and the lack of discretionary or 'pure' leisure time. Long hours of work coupled with prolonged periods of high work intensity can negatively affect a person's health and well-being (Tytherleigh, Jacobs, Webb, Ricketts, & Cooper, 2007).

The inclusion of overlapped activities in present time-use surveys can offer a more precise estimate of unpaid work (Apps & Rees, 1996; Beneria, 1996; Bittman, 1996; Folbre, 1997) . And a better understanding of how individuals and families organise their daily life can provide a more enhanced assessment of the impact of economic change on living standards and individual well-being (Humphries, 1999)

Many time-use researchers have argued that time-use studies should systematically collect data about secondary activities. Some researchers take the approach of dividing the time spent on the episode between the two activities. A person who is eating and watching television for an hour would be classified as having spent one-half hour on each activity. It is not immediately clear how time spent on secondary activities should be counted, because reported secondary activities can be either true simultaneous activities or short-duration sequential activities that are reported as secondary (Kitterød, 2001).

According to Kitterød (2001)Four reasons have been given for recording secondary activities in time-use surveys:

- People often do several things simultaneously; recording parallel activities is assumed to give a most complete picture of people's time use.
- Participants will be frustrated if they are not allowed to report more than one activity for each time interval in the diary.
- Space for secondary activities diminishes the risk of participants violating instructions and reporting more than one main activity in each time interval.

It is further argued that the amount of secondary activities reported is an indicator of data quality. The presupposition is that more secondary activities imply higher quality (Rydenstam & Wadeskog, 1998).

Researchers have recently argued that more attention should be paid to secondary activities in time-use analyses, as this will give a more comprehensive and accurate picture than when only main activities are analysed. Moreover, secondary activities should be analysed with the same exactitude as main activities, although some authors maintain that information on secondary activities should be observed more as an ordinal scale than as a precise time assessment (Kitterød, 2001).

In general terms people do not have a clear understanding as to what is a main activity and what, if anything, is a secondary activity. In fact, it is not easy to classify primary activities

and secondary activities. In many cases, the classification will derive from a subjective valuation. Often, we are unable to realise when simultaneity exists, as in the case of care and supervision activities.

Accordingly, it is important to assess whether certain diary designs tend to underestimate such activities. Information on secondary activities is certainly required to fully reflect time spent on activities that are often undertaken simultaneously with others and that may be even more important than primary activities.

3.5.2 Some results concerning secondary activities

This subsection provides some insights into secondary activities, without entering into too much detail, as this is not the main objective of this thesis. However, it is an interesting topic to address, because in subsequent poverty measurements we will see the relevance of somehow including secondary activities. A better way of collecting information on secondary activities will be discussed in the last section of this work.

We will specify hereinunder the main conclusions drawn from the analysis of secondary activities in the 2009–2010 Spanish Time-Use Survey.

Women dedicate more time to unpaid work than men as a primary activity, and also as a secondary activity. Women spend more than double the time devoted by men to unpaid work as a secondary activity (7.9 vs. 17.5 hours), an information that is worth taking into account, even more so because other studies consider this time is undervalued (María Ángeles Durán Heras, 2010).

Table 2: Mean of time committed to unpaid work as primary and secondary activity by sex

	Unpaid work as primary activity (hours)	Unpaid work as secondary activity (hours)
Men	151.26	7.95
Women	310.43	17.58

Source: Own elaboration from 2009–2010 STUS data.

As we already know, women commit more time to both paid and unpaid work than men. However, this also emerges in the category of secondary activity, which means that not only do women do more work, but they do it at the same time. This, in turn, translates into higher work intensity—more exhaustion, more stress—, which, as mentioned before, should be taken into consideration in poverty measurements.

Table 3: Mean time committed to work as primary and secondary activity by sex

	Time committed to work as primary activity (hours)	Time committed to work as secondary activity (hours)
Men	1.080.73	19.47
Women	1.139.85	23.83

Source: Own elaboration from 2009–2010 STUS data.

What happens if the man and the woman are both employed in the labour market? In that case, the differences in non-remunerated work are even greater. Regardless of the fact that women are fully incorporated to the labour market, they continue to do more unpaid work, even as a secondary activity (nearly three times more than men)(see table 4).

Table 4: Mean time committed to unpaid work as primary and secondary activity by sex when working in the labour market

	Unpaid work as primary activity (hours)	Unpaid work as secondary activity (hours)
Men	519.04	5.77
Women	442.47	12.81

Source: Own elaboration from 2009–2010 STUS data.

What happens if neither of them (man and woman) is employed in the marketplace? Women invest double the time on non-remunerated work as secondary activity. As already explained, even if men are not employed in the labour market the time that they devote to non-remunerated activities is not equivalent to that invested by women. Men spend in this case an average of 11.33 hours on unpaid work as secondary activity, compared with women's 20.77 hours (see table5).

Table 5: Mean time committed to paid work as primary activity and unpaid work as secondary activity by sex when not working in the labour market

	Paid work as primary activity (hours)	Unpaid work as secondary activity (hours)
Men	0	11.33
Women	0	20.76

Source: Own elaboration from 2009–2010 STUS data.

Many are the analyses that can be conducted on secondary activities and the different issues that arise around them. This is just a first approach meant to underline the importance of taking secondary activities into consideration when analysing time-use data. In that sense it is critical to take full advantage of the information provided by time-use surveys.

In addition to considering secondary activities, it is important to reflect on their meaning, to establish how to differentiate them from primary ones, and to determine whether it is appropriate to include as well tertiary activities. Likewise, diary instructions should underline the importance of recording all activities linked with supervision, being present, etc., which should be incorporated as either primary, secondary or tertiary activities.

As mentioned before, we are not including secondary activities in our measurement of time poverty, which will be introduced in the next chapter. However, the ideal time-poverty indicator should be able to recognise and include secondary activities, as they appear to be one of the most important contributions to time stress, time quality, time intensity and, in consequence, time poverty.

In the next chapter, we will discuss the importance and different measures of time poverty. None of them is yet capable of taking into consideration secondary activities, but future measures will need to do it in order to better capture the implications of time poverty.

4. Time poverty in Spain

This chapter returns to the analysis of the theoretical framework of time poverty, and of the main time-poverty studies. Its main objective is to examine time poverty in Spain and those individuals who are more vulnerable to being time and income poor. We also study the main variables that determine the probability of being time poor.

We will also look at the time use of children and older adults, as two specific groups of interest, and finish by looking at some of the policy implications derived from the analysis.

4.1 Theoretical framework

Time use and time poverty have caught the attention of researchers and policymakers, because until recently income was the basic resource that everyone understands is necessary and that affects individual and household well-being. However, only in recent years has time use come to be recognised as a key variable that determines well-being.

Time allocation involves decisions based on monetary constraints, social pressures and norms, personal preferences, and other available resources such as social networks. Some activities, including childcare or cleaning, can be done by hired labour. Because of this, richer individuals are more likely to have time to allocate to activities they prefer. Poorer individuals, in comparison, have less availability of monetary resources to acquire goods and services. As a result, individuals with limited resources do not have enough time to escape from income poverty(Burchardt, 2008); for example, they may not be able to work enough hours to raise themselves above the income-poverty line, or they may be only able do so at the expense of their individual and household well-being. This kind of household manifests a severe trade-off between income and time. Individuals and households that are both income and time poor find themselves in the most complex situation. This study also focuses on these specific cases.

The main motivation of this section is therefore to include the time variable in studies of poverty, and focus specifically on those who are below the time-poverty threshold and on those who are time and income poor. The relevance of this work is based on the fact that there are no previous studies on time poverty in Spain. We thus hope to shed some light on this field and use it as a case study to give recommendations on time-use surveys and time-poverty indicators, according to the limitations found in this work.

This study also focuses on two important issues. First, the issue of gender, because it has been widely evidenced in the literature that women are those who primarily suffer from time and income poverty (Antonopoulos, Masterson, & Zacharias, 2012; Bardasi & Wodon, 2010; Burchardt, 2008). Second, the determinants of time poverty, because we aim at highlighting some important implications in terms of policy recommendations derived from the inclusion of time poverty in traditional studies on poverty.

We define time poverty as the condition of some individuals who do not have enough time for rest and leisure after devoting the necessary time to paid and unpaid work, study and personal care (Bardasi & Wodon, 2006).

The following paragraphs provide an overview of the income- and time-poverty measures that will be discussed in this work. However, the focus will be particularly on time-poverty measures.

Authors such as Amartya Sen (Amartya Sen, 1970, 1976), Atkinson (Atkinson, 1987, 1989), Ravallion and Bidani (1994), and Danziger and Haveman (2001), among others, have broadly researched income poverty. According to (Ruggles, 1990), income poverty can be measured using one of three approaches. The first approach focuses on absolute poverty, i.e. having less than the objective amount of consumption or income allowing a minimum level of economic well-being to be reached regardless of the context. The second approach focuses on relative poverty, i.e. having less than others, with the poverty threshold defined as a relative measure of the population, and its impact therefore depending on the context. The third

approach is based on subjective poverty, i.e. the feeling of not having enough (Kalenkoski, Hamrick, & Andrews, 2011).

However, poverty is not a simple concept depending only on monetary resources, because deprivation of wealth does not properly mean deprivation of welfare, especially for very low levels of income. This is basically related to three issues: 1) there are certain essential goods that cannot be replaced when the consumed quantities are very small (education, access to credit and other services, etc.); 2) poverty is closely related to social exclusion, a phenomenon that goes far beyond the lack of rent; and 3) taking into account market prices as appropriate consumer aggregators can be controversial, given that these prices are a reflection of the whole population's consumption patterns, which may differ substantially in the case of very low income families (Herrero, Soler, & Villar, 2013).

Measures of well-being and poverty have commonly assumed income to be the variable that best represents well-being. Although poverty has been analysed as a multidimensional problem, it has traditionally been measured through one dimension only: income (Alkire & Foster, 2011). The recognition of these limitations has assisted the development of methodologies to measure poverty from a multidimensional approach.

Time and money are two of the main constraints that people can suffer in their lives (Burchardt, 2008). Given the limitations of the neoclassical approach, the issue of alternative measures has gathered growing attention in recent years. Many attempts have been made at incorporating a multidimensional perspective to the phenomenon, not merely focusing on income or consumption. Time is a multidimensional concept that provides certain partial solutions to those limitations. Thus, the time factor enables taking into account: 1) aspects that have a different impact on men and women, and, 2) aspects of people's well-being that are crucial to their lives, such as care work.

In recent years, the concept of poverty has moved towards measures defined from a multidimensional perspective (Alkire & Foster, 2011; Danziger & Haveman, 2001; Nolan & Whelan, 1996; Ravallion, 1999; Smeeding et al., 1993), among many others

In Spain, some studies that adopted this approach, such as those by Martín-Guzmán and Bellido (1994), Martínez and Ruiz-Huerta (2000), Navarro and Ayala (2004), Pérez-Mayo (2004), Ayllón et al. (2007), Ayala et al. (2008, 2009), Gil and Ortiz (2009), Ayala, Jurado and Pérez-Mayo (2009), and Poza and Fernández (2010, 2011). Their main conclusion is that consideration of these additional aspects of deprivation, which are not merely monetary, leads to different results than those obtained in traditional studies, although there is no statistically significant relationship between indicators of monetary poverty and social deprivation.

Herrero et al. (2013) propose a slightly different analysis, using the methodology developed by the United Nations Development Programme (UNDP) to calculate the multidimensional poverty index (MPI). This index incorporates aspects not only related to deprivation of material elements, but also—in line with traditional development indicators—to health, educational and income factors, as well as social exclusion for those who are not employed. All of these are meant to identify the social, economic or demographic characteristics associated with economic poverty, but they do not consider other aspects affecting well-being, such as time.

None of those studies incorporated time as a variable for measuring poverty. This work tries to fill this gap in the literature by analysing the multidimensionality of poverty in Spain including time. The Spanish case is interesting since, at 15.5%, it presents one of the highest percentages of economic poverty in the European Union (OECD, 2017), and one of the largest gender gaps in time use (Lina Gálvez-Muñoz et al., 2011). In fact, this work aims at highlighting its particular importance in terms of gender, because it has been widely demonstrated in the literature that women are the main sufferers of time and income poverty (Burchardt, 2008; Williams et al., 2016; Wodon & Blackden, 2006).

4.1.1 The concept of time poverty

Time poverty approaches the idea that income poverty and lack of time may reinforce each other, thus adversely affecting the well-being of household members, especially women

and children (Bardasi & Wodon, 2010). Workload constraints may force an individual to make trade-offs between different market-oriented and household activities. An example would be the trade-off between gaining employment and staying at home taking care of the children because the salary does not compensate for paying someone to take care of them.

Bardasi and Wodon (2006) note that, while the idea of 'time poverty' is not new and many time-use analyses have in some way or another used this concept, there have been few attempts to formally profile society's 'time-poor'. Indeed, previous analyses of time-use data have employed rather loose definitions of the term, with some researchers equating time poverty with long hours at the workplace, others examining total paid and unpaid work, and few directly examining free time (Bittman & Wajcman, 2000; Jose Ignacio Gimenez-Nadal & Sevilla-Sanz, 2011).

The concept of time poverty, as mentioned above, is not a novel contribution in the literature, but there is an increased interest in time poverty due to the availability of time-use data. Time allocation has implications in a large number of areas, such as the distribution between paid work, unpaid work, rest and leisure, which has important social and economic consequences, also and ultimately in terms of the population's well-being.

The importance of time poverty is related, not only to income and consumption, but to freedom in allocating time. In Amartya Sen's terminology (Amartya Sen, 1976), people's capabilities for development take the central place in the analysis of well-being, and, in this sense, time is essential. The capabilities approach differs according to the context. It allows the use of plural analysis techniques and the selection of those most relevant to the problem (Comim, Qizilbash, & Alkire, 2008). In a multi-dimensional analysis of poverty, economic goods are not important in themselves, but only insofar as they help promote the free choice between 'to do' or 'to be'. Robeyns (2008) emphasises that the extent to which a person can generate goods and services depends on the factors that enable these capabilities. Thus, time is established as a key element in how people may develop these capabilities.

The capability approach (Amartya Sen, 2004) is a good instrument of analysis in this

regard. We consider that time poverty limits people's individual capabilities. If people have time-poverty problems, this will affect not only their present functioning but also their future capabilities, limiting their ability to relax, to enjoy time for leisure and recreation, and to invest in expanding their capabilities and opportunities to acquire more skills through, for instance, formal education. Blackden and Wodon (2006), among others, suggest that time poverty may even contribute to limiting acquisition of human capital, weakening health and undermining well-being (CEPAL, 2009).

In terms of poverty, we also need to consider collective capabilities, given the intrinsic and instrumental importance of social structures, and to explain the significance of collective freedoms and collective agency, as well as to point out the roles of collective action, institutions and social capital in generating new collective capabilities. While individual capabilities are the various functioning bundles an individual can choose from in order to achieve the life they value, this thesis work introduces this new 'type' of capabilities an individual can gain: 'collective capabilities'. These are defined as the newly generated functioning bundles a person obtains by virtue of their engagement in a collective that helps them achieve the life they value. They are the new choices that the individual alone would neither have nor be able to achieve unless they joined a collective, such as a self-help group.

We must also consider collective capabilities as more than simply the aggregation of individual capabilities. Collective capabilities are 'those capabilities that can only be achieved socially as a result of social interaction' (Comim & Carey, 2001). 'Individual capabilities' depend on collective capabilities, since the act of choosing the life one has reason to value may be a collective rather than an individual act. Ibrahim analyses how the poor can act together to expand and exercise new 'collective capabilities' (Ibrahim, 2006).

Recently, research has suggested that poverty, both in income and time, may result in poor decisions that exacerbate and extenuate one's state of deprivation (Mani et al., 2013). At the same time, abundance of income and excessive amounts of free time due to disability or unemployment may not be useful for creating well-being (Mani et al., 2013).

4.1.2 Time-poverty indicators

Scholars have two main ways of measuring time poverty: 1) indicators that give monetary value to time, and create adjusted income-poverty measures; and 2) time indicators that consider time only as a measure of time poverty, i.e. pure time-use indicators. In this work, we will use the second approach.

Vickery (1977) analysis developed a two-dimensional conceptualisation of income poverty adjusted for time in the United States context. Douthitt (2000) updated Vickery's model using data from the United States Time Use Survey. Bardasi and Wodon (2010) in Guinea, and Harvey and Mukhopadhyay (2007) in Canada are among the scholars who have followed this approach. There are similar but somewhat simpler approaches, like the one based on discretionary time (Goodin et al., 2005), which convert necessary monetary expenditures to time via a household income rate, so that all needs can be expressed in hours.

In contrast, (Kalenkoski et al., 2011) argued that time should be considered an important resource, and time poverty an important risk factor independent of income poverty. Similarly, Bittman and Wajcman (2000) finds that 'income plays a significant role in the distribution of leisure time', and examines the distribution of risk of time poverty in and of itself. Even those who consider time poverty separately in some cases include income or income poverty as a covariate in modelling the effects of time poverty. In this study, we analyse both time and income poverty.

In summary, the first type of indicators (full time income indicators) monetise household production. They calculate time deficits and add them to the household's official poverty threshold to create an adjusted poverty line. We believe these poverty measures are extremely useful and provide a vision of poverty that includes household activities. However, we also consider poverty measured by itself to be of great help, and believe that somehow giving value to unpaid care is a challenge. Consequently, the 'pure' time indicator is the one used in this work. Nevertheless, we will also take income poverty into consideration in order

to analyse income and time poverty jointly.

Before we continue, a review of the two main kinds of time-poverty indicators defined at the beginning of this section is presented here:

a) Two-dimension approach: time and income poverty (full time income approach).

Vickery (1977) was the first to affirm that income poverty may be related to available time. She argued that the design of poverty thresholds should consider not only the amount of income required to purchase the minimum goods and services from the market, but also the amount of time needed to process those goods and services in home production. If a household does not have enough time for home production after deducting the time spent on paid work to earn an income at the poverty threshold and the minimum time required for rest and leisure, then the household will face an income shortfall because it will not be able to afford outsourcing home production to the market under the existing poverty threshold. In this regard, a household is deemed to be time poor if it has a time deficit in home production. Vickery calculated time-adjusted income-poverty thresholds for the United States based on her estimate of the minimum amount of time required to complete household tasks for an individual whose monetary income equalled the United States poverty threshold. For this purpose, she calculated the trade-off between money and time (a threshold curve) representing the composite poverty line, so that households are defined as poor if they have less than a certain combination of time and money (Vickery, 1977).

From a similar approach, Douthitt updated Vickery's time-adjusted income-poverty rates for the United States using the 1985 United States Time Use Survey. She calculated time-poverty rates by comparing people's actual available time with the discretionary time that would eventually be available given an absolute amount of time required to perform personal care and household maintenance (Douthitt, 2000).

Bittman (2002) defined a leisure time-poverty threshold as 50% of the population's median leisure time, using time-use data from Australia to identify the main determinants of time poverty and concluding that the most important ones are hours of employment, family

responsibilities and gender.

Harvey and Mukhopadhyay (2007) made similar calculations when they analysed time poverty for working parents using 1998 Canadian data. They found a higher incidence of time poverty among employed single mothers or fathers with children.

Goodin et al. (2005) described the concept of discretionary time as the amount of time potentially available to individuals after they spend only the amount of time strictly required to maintain a subsistence standard of living. Using data from the 1992 Australian Time Use Survey, they defined poverty as 50% of the median income. For unpaid work and personal care, they proposed the mean time spent in these activities minus one standard deviation (Goodin et al., 2005).

With regard to the relative standard approach, Bardasi and Wodon (2006) studied time poverty in Guinea and defined 'time poverty' as the need to spend long hours working, whether in the labour market or doing household tasks, because the alternative would be (even deeper) consumption poverty. In fact, they refined the definition of 'time poverty' by combining this concept as in 'working long hours' with that of 'consumption poverty'. They included a constraint on consumption poverty (or the risk of becoming consumption poor if one reduces working time) in order to assess whether a currently non-poor household would become poor if an individual who works beyond the time-poverty line reduces their working hours (Bardasi & Wodon, 2010).

They defined the concept of relative threshold, and used two alternative relative time-poverty lines: a lower threshold of 1.5 times the median of the time spent at work (distributed between paid and unpaid work), and a higher threshold of 2 times the mean of that time.

Harvey and Mukhopadhyay (2007) proposed a method for setting time-adjusted income-poverty lines under the assumption that housework and care services can be purchased from the market. This method first calculates the monetary value of the time deficit in home production, and then deducts this value from the household income before estimating the poverty rate. These authors found that, compared with other households, single-parent

households and households with more children are more likely to have time deficits in home production and to be time poor.

Adopting a similar approach, (Zacharias, Antonopoulos, & Masterson, 2012) analysed time and income poverty in Argentina, Chile, Mexico, and South Korea. The Levy Institute introduced the Levy Institute Measure of Time and Income Poverty (LIMTIP), a new poverty indicator that considers time and income simultaneously, and the authors compared it with the traditional poverty measure for Argentina, Chile, and Mexico. They calculated the time committed by the individual to personal care, the hours required for household production, and the time devoted to income generation. An individual suffers from a time deficit if their committed time is greater than the number of hours in a week. These authors assume that the threshold value for personal care is equal to the average weekly hours spent by adults on personal care activities, and is set at the individual level and applied uniformly to every adult. In contrast, thresholds for household production hours are defined at the household level (Antonopoulos et al., 2012). These authors found that the incidence of time deficits among employed individuals was substantial in all countries studied, with the rate falling by between 38% in Ghana and 52% in Tanzania.

b) One-dimension approach: time-poverty indicators

The first studies carried out by Bardasi and Wodon in 2006 in Guinea used the time indicator only, without including any income or consumption measures. They used two alternative relative time-poverty lines: a lower threshold equal to 1.5 times the median of the total individual working hours (distributed between paid and unpaid work), and a higher threshold equal to 2 times that median. The number of times depended on the poverty line defined, which ranged from 39.2% to 15.1%, with important gender differences (Bardasi & Wodon, 2006).

Kalenkoski focused on discretionary time to analyse time poverty using 2003–2006 United States time-use data, and confirmed the idea that individuals in households with children have less discretionary time and are thus more likely to be time poor than those in

households without children. The time poverty calculated for this period was 20.35%, controlling for other household characteristics. They found that an additional child reduces an adult's daily discretionary time by 35 minutes per day (Kalenkoski et al., 2011).

Burchardt (2008) calculated time-poverty thresholds for the United Kingdom based on the relative distribution of poverty (50%, 60% and 70% of the median disposable time and income). The study established that, although the time-poor and the time- and income-poor spend a comparable total time on personal care and on paid and unpaid work, the composition of their time is different. Those who are both time and income poor spend a much larger quantity of time in unpaid work, although those who are only time poor spend more time in paid work. This is an important observation, because spending a major proportion of time in unpaid activities is likely to generate a higher risk of becoming income poor.

Merz and Rathjen (2014)used the German Socio-Economic Panel and the 2001–2002 German Time Use Study, and found that the interdependence between time and income is significant. A substantial fraction of time-poor individuals are not compensating their time deficit even by raising above the income-poverty threshold. These poor people in particular have so far been ignored in the literature on poverty and well-being, as has been the time crunch. In the United Kingdom, Chatzitheochari and Arber (2012) defined time poverty as a relative deprivation of free time, and classified individuals as time poor when their free time was below 60% of the median free time of the sample. The analysis of the 2000 United Kingdom Time Use Survey highlighted the fact that, overall, working women experience multiple and severe free time constraints, which may constitute an additional barrier for their leisure and social participation (Chatzitheochari & Arber, 2012). Moreover, the analysis of time poverty in Ireland using the 2005 National Time Use Survey across different population groups revealed high workloads among the employed and those caring for young children and adults. The authors also underlined that high levels of committed time are associated with greater subjective feelings of time pressure (McGinnity & Russell, 2007).

Using this same approach we find *Time Poverty, Work Status and Gender: The Case of Pakistan*, by Najam-us-Saqib and Arif (2012), based on the 2007 Time Use Survey conducted

in Pakistan. The authors calculated that the incidence of time poverty was 14%. Women were found to be more time poor than men, whether employed or not. Employed women were far more time poor than those not employed. Women accepting a job had to make a major trade-off between time poverty and monetary poverty. These data showed a different reality in developing countries concerning low wages. People working in professions and industries that generally require extended work hours and offer low wage rates are more time poor. These workers tend to be both income and time poor. The close association between time poverty and low income found in this study corroborates this conclusion (Najam-us-Saqib & Arif, 2012). Also related to the importance of wages is the analysis of time poverty in China using the 2008 China Time Use Survey, where the authors estimated time-poverty rates and compared the profiles of time-poor male and female workers in urban China. In all cases, paid women workers and low-paid workers accounted for a disproportionate percentage of the time-poor. Also this study show that, other things being equal, workers who are women, low-paid, married, and who live with children or elderly people in countries with higher overtime rates, as well as those with lower minimum wage standards, are more likely to be time poor (Qi & Dong, 2018).

In Latin America, there are also two main studies using this approach in Guatemala and Brazil. *Time Pressed and Time Poor: Unpaid Household Work in Guatemala* examined unpaid work in Guatemalan households using data from a national household survey that was conducted in 2000 and included a time-use module. The contribution highlighted the economic importance of unpaid work in Guatemalan households and concluded that, in 2000, its value was equivalent to approximately 30% of the Gross Domestic Product (GDP) for that year. Furthermore, women with young children, whose time is disproportionately spent on childcare and household production, were more likely to experience time and income poverty—a finding that should be taken into careful consideration when designing social programs and interventions, such as conditional cash transfer programs that require parallel time inputs from poor households. This work is also of interest when reporting on the intensity and necessity of more time among women: approximately 23% of women and 13% of men report using more

than 24 hours a day. Among the findings of the study 'Time poverty in Brazil: measurement and analysis of its determinants' is the fact that women are the time-poorest individuals in urban and rural areas. Another significant finding is that the high time-poverty rate among children (16.1%) is not far from the adult rate (19.7%), showing the prominence of child labour (Ribeiro & Marinho, 2012). In this sense, the policy implications derived from this work are crucial for children's well-being.

There are also studies that link time poverty with health-related areas of analysis, such as, for example, (J. Spinney & Millward, 2010) did with physical activity using Canadian time-use data for 2005. They also employed a subjective measure of time stress or time crunch that was available among the data they managed. The results indicated that, at least from a public health and social policy perspective, time poverty may be more important than income poverty as a barrier to regular physical activity, which, in turn, has real costs for society (J. Spinney & Millward, 2010).

The most recent study on time poverty was carried out in Mozambique, following previous works by Bardasi and Wodon (2006). The main findings were that women's labour allocation to economic activities, including subsistence agriculture, is comparable to that of men. Moreover, household chores and care work are women's responsibility, which they perform with minimal assistance from men. The authors analysed the time-poverty headcount and concluded that, compared to 50% of time-poor women, only 8% of men face time constraints (Arora, 2015).

In addition to the previous examples, there has been another attempt to analyse time poverty from a qualitative point of view. Walker (2013) undertook a gender analysis of a primary health promotion project in Kyrgyzstan in 2010 and asked the participants about time pressure and time stress, with a special focus on gender equality (Walker, 2013).

As mentioned before, many studies have sought to measure poverty in Spain, and some of them have tried to explain the causality between different levels of poverty, but no experiences have as yet incorporated time as a multi-dimensional concept in poverty measures.

In this sense, the present thesis work aims at making a contribution to studies on time poverty.

4.1.3 Studies of time poverty in Spain

There is no previous experience of time-poverty studies in Spain. In this work, we will take a step in this direction. However, a number of studies, such as those by María Ángeles Durán (María Ángeles Durán Heras, 1997, 2010; Durán & Heras, 2012; Jose Ignacio Gimenez-Nadal & Sevilla, 2012) and others, have analysed available time from a strictly theoretical point of view (Garcia Sainz, 2017)

Jose Ignacio Gimenez-Nadal and Sevilla-Sanz (2011) carried out a study that examined time-use and leisure-satisfaction data for a variety of Western European countries including Spain. Their findings showed that working mothers have much lower leisure levels than working fathers and singles. Furthermore, working mothers are also most likely to report the least satisfaction with their free time (Jose Ignacio Gimenez-Nadal & Sevilla-Sanz, 2011). In a second study, these authors analysed total work by comparing the two latest Spanish time-use surveys. One of the main finding of this work was, as mentioned before, that the gender gap in total work is affecting women negatively had increased during the analysed period by 2 hours per week. At the root of the increase in the gender gap in total work to the detriment of women was a relative rise in market work of 8 hours per week, coupled with a relative decline in nonmarket work of 6 hours per week, which led Spanish women to reduce their leisure time by 2 hours per week between 2002–2003 and 2009–2010. For men, authors found that time devoted to paid work decreased, while time dedicated to unpaid work, childcare and leisure increased. For women, time devoted to paid work remained relatively constant, and they experienced a decrease in time spent on household work, which was balanced out by an increase in time dedicated to childcare and leisure per week. According to the authors, those changes have enlarged the gender gap in total work and leisure over the period (Jose Ignacio

Gimenez-Nadal & Sevilla, 2014).

In this thesis work we focus on time poverty and use the latest time-use survey available (2009–2010), because we found that the differences concerning time poverty between these data and those from the 2002–2003 survey were negligible. On the other hand, the categorisation and definition of each group of activities do not allow making comparative analyses.

4.2 Time poverty in Spain

This work addresses the concept of poverty in its broader context, but focusing especially on time poverty in Spain and its impact on different population groups for the purpose of highlighting the main factors interacting with time poverty.

As mentioned before, the model is based on individuals rather than households. Individuals are the appropriate unit of analysis, because the outcomes—free time and disposable income—are experienced by individuals. It is clear that the process of determining these outcomes includes decisions about the allocation of time to paid and unpaid work made more or less jointly by two or more members of the household, and the resulting time and income may be shared within the household to a greater or lesser extent.

The second assumption is that the context in which decisions are made is constant. This context includes the following aspects: physical environment, such as transport infrastructure, which influences the feasible travel-to-work area and travel-to-childcare area; economy, including the price of returning to part-time and flexible work, and the level of demand for labour; cultural and social aspects, specifically gender norms and other norms determining who needs to take on the different responsibilities; and public policies, establishing the groups of public goods and services that are available and for whom (Burchardt, 2008). We analyse data from the 2009–2010 Spanish Time-Use Survey.

We aim at exploring each of the main components of the model—resources and

responsibilities—in more detail. Resources include a reference period of 24 hours (1,440 min) per day, since the individuals can use their time either directly to meet their responsibilities or indirectly to earn the income required to pay for goods and services, which in turn will meet their responsibilities. Income is not treated as a basic resource, since it derives from the application of time and one or more forms of capital: financial capital, physical capital, human capital—including educational qualifications, skills, experience and health status, which is a key determinant of the wages an individual can command—, and social capital—such as, for example, a network of friends and family (Burchardt, 2008), which is also essential.

However, the focus of this work is on time use as an indicator of poverty. The motivation is based on the fact that unpaid work is mostly invisible, which is also usually associated with its low social value. Unpaid activities demand significant time, and, when combined with participation in paid work, are one of the main determinants of time poverty. Women in poor households are particularly overloaded with these time demands. Thus, as Folbre (2006) indicates, increased participation in paid employment is often achieved at the expense of time once devoted to personal care, sleep and leisure. As the typical gender division of labour implies that women are more commonly expected to undertake unpaid care work in the household, time-poverty studies show the important gender impact of this kind of poverty. One of the main contributions of this work is thus to incorporate unpaid work to poverty indicators.

We consider that a time-poverty measure would be useful to complement income-poverty measures, and would help identify those people with relatively little command over the important resources required to support certain levels of well-being. We believe time poverty can play an important role in policy research and evaluation. Time poverty fits within a broader body of literature that highlights the need for an expanded set of measures to understand the state of society, moving beyond the Gross Domestic Product and income poverty. Linking time poverty to well-being may provide a better understanding of the dynamics of poverty.

In addition, not all studies have been clear in how they define and categorise activities.

It is thus necessary to create comparable time-poverty indicators across countries (Williams et al., 2016). These measures may provide different conclusions about individual time poverty, which could reveal inequities in intra-household allocation of time, tasks, and resources. While time poverty is a concept first defined by Vickery (Vickery, 1977), researchers have only recently started to investigate the uses, causes and potential consequences of time poverty.

4.3 Measurement of time poverty

Once the approach we are using to measure poverty is decided, following the World Bank study (2006) and traditional research works on poverty like the one by James Foster, Joel Greer and Erik Thorbecke (Foster, Greer, & Thorbecke, 1984), we need to define what kind of activities are included in the analysis and if we are taking an absolute or relative perspective.

4.3.1 Activities included in defining the time-poverty line

All considerations of time poverty are based on the delineation of time into some categorisation, although, even when such classification is used, there are substantial variations in how activities are classified. For this reason, comparisons of poverty measures should be made with caution. Moreover, time poverty needs to be standardised before we can establish comparable measures.

Some scholars use Gershuny's 'triangle of daily activities', consisting of paid work, unpaid work, and leisure (Gershuny, 2011). Others cite 'the four kinds of time' defined by Ås (1978), who distributed activities into necessary, contracted, committed, and leisure time. Necessary time includes the activities required to attend people's physiological needs, such as eating, sleeping, health and hygiene—although many have discussed eating as being a leisure time activity, at least in developed countries (Jastran, Bisogni, Sobal, Blake, & Devine, 2009), among others), to which we may agree to a certain extent. Contracted time includes activities that create income, while committed time refers to activities that must be performed as a result

of previous life choices (Kalenkoski et al., 2011), such as buying a home, having children or taking care of dependent older adults. These activities are often referred to as unpaid work or household production. Leisure time is what is left after the other blocks of time are deducted from the reference period of 24 hours (1,440 minutes) per day.

In this work, we use relative available time, which is defined as 24 hours minus personal care, paid work, and unpaid work. Once activities are divided into those areas, the resulting time sum is compared against a threshold. This threshold allows for identification of those with a deficit of time or an excess of time allocated to the various activities. On the contrary, discretionary time determines the minimum time required for each kind of activity. However, it is necessary to challenge certain assumptions and ask, for example: What is the minimum time to be spent with children older than 3 years? For it is difficult to define a relative poverty line and not make assumptions about the number of hours of care a child aged over 3 years requires. This explains why we are not considering discretionary time as a variable in our study. We focus instead on committed time and on people who are above a certain threshold, while other authors concentrate on discretionary time and on those who are at critically low levels.

Previous research has not been systematic in categorising activities, and this can create inconsistent definitions and headcounts of time poverty. Indeed, in a review of eight papers investigating time poverty or scarcity, we find little overlap in the way they categorise activities. Only activities labelled as socialising, relaxing, and leisure, and those described as sports, exercise and recreation, had agreement across studies as being discretionary activities. There was substantial disagreement in most other categories. Vickery (1977), Harvey and Mukhopadhyay (2007), and Burchardt (2008) regarded eating and drinking as necessary, while. Kalenkoski et al. (2011) and Aguiar and Hurst (2007) count it as discretionary. Some of the articles appear to put education in the ‘necessary’ category, although Burchardt (2008) did so only in the case of employment-required continuing education, and Bittman (2002) excluded hobby education. Those focusing on leisure time have more restrictive definitions (leisure for some authors is a subset of others’ discretionary time), but inconsistencies remain. For example, Aguiar and Hurst (2007) included personal care activities as leisure, while Bittman

(2002) did not. This is an issue that we will try to solve in the next paragraphs, although, as mentioned before, categorising activities involves making certain assumptions.

One of the crucial issues in this process is to determine the poverty line. For this purpose, we need to decide the kind of activities that will be considered, and whether this will be a relative or an absolute poverty line. As we already know, activities are encoded according to a harmonised list elaborated by Eurostat (HETUS) (EUROSTAT, 2008), which includes 10 groups of activities: personal care, paid work, studies, household and family care, volunteer work and meetings, social life and recreation, sports and outdoor activities, hobbies and computers, the media, and travel and unspecified time use. In this study, some of these activities are re-classified into different categories in order to better reflect the main hypothesis. The main activities are thus re-classified into the following: paid work, unpaid work, studies and personal care, because we need to understand the time that is committed in order to classify the time available and measure time poverty.

For the analysis, we calculate the total actual time spent on those four categories of activity counted as committed time. The travel time required to conduct those activities is included in each of them. They are defined as follows:

- **Paid work:** Includes time spent in the labour market, commuting to work, and time devoted to job seeking.

• **Unpaid work:** Includes domestic tasks, childcare and unpaid care for household members and other households. Although unpaid and care work for other household is classified as voluntary work by the Instituto Nacional de Estadística (INE, 2011), we include it in our measure of unpaid work irrespective of whether it is carried out for household members or not.

• **Studies:** Includes time dedicated at school and time to study. Although most literature considers this activity distinct from 'committed' time (Burchardt, 2008; Kalenkoski, Hamrick and Andrews, 2011), we argue that time in this activity reflects a 'commitment' to education,

and it can be understood as work related to participation in education.

• **Personal care:** Includes sleep and other necessary activities like eating, drinking, etc. In order to avoid those who reported excessive hours sleeping being classified as time poor, following the National Sleep Foundation's recommendations that 7 to 9 hours sleep is appropriate for adults (Hirshkowitz et al., 2015) we capped this variable to maximum of 9 hours per day.

The time dedicated to paid work is not difficult to identify, since it includes all paid activities linked to the labour market. We take both primary and secondary work into consideration in our analysis.

In relation to personal care, we adopt some restrictions based on the idea that someone sleeping more than 8 hours, or dedicating more than 3 hours to eating, does not 'distort' our measure of time poverty. As the number of such cases is very small, we decided to disregard those observations.

With regard to unpaid work, our definition is much broader than those of other studies on poverty and time, and we believe this is one of the main contributions of the present work. We include both domestic work and care work in the definition of household non-remunerated work, which, in the 2009–2010 Spanish Time-Use Survey, is placed within the category of home and family. In the proposal made in the last section of this work, we indicate that it is fundamental to generate a category called unpaid work that allows identifying the tasks performed at household level and is considered as work, according to the concept of work by Margaret Reid presented in the first chapter of the present dissertation (Reid, 1934).

Other main contributions of this work is the consideration of the domestic and care work carried out in other households, which in Spanish time-use surveys are categorised as voluntary activities. Care activities performed in other homes may be voluntary to a certain extent, but they are still work and, arguably, most of them are not totally voluntary but linked to the characteristics of care (affection, bonds). Also, if not done by the individual in question, the work would have to be assumed by someone else. On the other hand, it may also be that

some members of the household do not live in the same house, and this should be taken into account. The fact that they do not live in the household, does not mean that they are not members of the family or relative, and that there are some care responsibilities associated with them.

Furthermore, it is essential to keep in mind that, once care activities are undertaken, a certain commitment to the continuality of care is generated. Finally, it is important to reflect on the extent to which voluntary activities are truly voluntary, and the autonomy there is to decide about the use of time. In our view, activities related to care are often not totally voluntary, because there is social and family pressure, among other factors, conditioning them. In this sense, better-quality time-use surveys are needed for a better understanding of the decision-making process behind any election on how to employ one's time.

The last variable considered is that of the individual's studies, which we understand is similar to that of work, because, once a person has decided to carry out a specific activity, such as enrolling in a course, it implies commitment, attendance and dedication and have implications for the future.

4.3.2 Relative poverty line

Broadly speaking, there are two approaches in conventional income-poverty analysis. One is to set the threshold in relation to the distribution (commonly, at 60% of the median disposable income), and the other is to set an absolute threshold, defined for example by a budget standard, i.e. the income required to purchase a basket of goods and services regarded as the minimum necessary by different types of family. The relative approach can be applied to the time dimension by setting the time-poverty threshold at a percentage of the median available time.

As mentioned in the previous section, activities have much less clear absolute requirements and it is not easy to define the minimum time required for domestic work like cleaning, washing and shopping, or caring for others. Relative definitions of minimum time

requirements for various activities imply that the time needed to perform a given activity depends on how much time other people are spending on that activity, which is not intuitively plausible for activities like sleep. This is, however, debatable with respect to housework According to previous studies (Goodin et al., 2005), creating a relative time measurement of each activity can distort the results, because it depends on the time devoted to other activities. Calculating an average of the total available time is recommended, and thus we will use a relative poverty line based on the total available time.

Furthermore, we will use a relative poverty line in parallel to relative income-poverty measures. Rather than making a set of assumptions about the hours needed to maintain subsistence-level hygiene, sleep, household work, and care activities, relative time-poverty measures first define the set of times of interest, and then define critically low levels based on the observed distribution of that set of focal time. Bittman (2002), for example, focused on leisure time, and defined the time-poor as those in his sample at or below 50% of the median leisure time. Bardasi and Wodon (2010) used a relative definition of time poverty for Guinea with a threshold set at 50% of the mean, while Burchardt (2008) applied a threshold of 60% of the median free time to the 2000 United Kingdom Time Use Survey data. Kalenkoski et al. (2011) and Kalenkoski and Hamrick (2013) used the 2003–2006 United States Time Use Survey data, and established time-poverty thresholds for a variety of definitions, using 50%, 60%, and 70% of the median discretionary time for the overall sample and for subpopulations, defined by various combinations of household composition, income categories and employment. Most analyses in the original article used 60% of the median for the overall sample. We will follow this approach in the present work and define the threshold at 60% of the median available time. (We have also made comparisons of different poverty lines, and the results were very similar to the ones above, while sensitivity analyses to check the results were consistent.)One of the main reasons we decided to use a relative poverty line is the moving character of the standard of living indicator (Laderchi, Saith, & Stewart, 2003). Using a percentage of the overall median of the distribution of free time allows the resulting standard of living to move as technology, norms, retirement age, life expectancy, and unemployment

rates change within society. (Burchardt, 2008).

Relative time-poverty threshold choices become more complex (probably unnecessarily so) when the analyst attempts to apply different standards of living to different subsets of the population. Kalenkoski et al. (2011) tested the sensitivity of time-poverty rates in varying the medians by household composition, alone and in combination with presence of a young child, income category, and employment status, and concluded that only using the medians of unemployed adults made visible alterations. As mentioned before, we will follow this approach.

4.3.3 Construction of the poverty line

Following the literature presented previously, we will define the time-poverty line as a relative measure set at 60% of the median available time. Although it is not included in this work, we also set other time-poverty lines (at 50% and 70% of the median) and proved that there are no substantial differences between the different time-poverty measures. In addition, the income-poverty line is defined as a relative measure set at 60% of the median income, following the latest OCDE and Spanish studies on poverty (OCDE, indicators).

Individuals distribute their time into personal care, paid work, unpaid work, and studies, and this generates a certain income level and defines the time committed to those activities. We will examine the distributions of income (Y) and time (T) both separately and together, with a special interest in individuals who are both time and/or income poor, as seen in the following flow chart.

Available time is measured for each individual. It is defined as the time that is disposable after considering unpaid work in an extensive way, paid work, studies, and personal care, with certain restrictions.

An individual may be time poor even if their partner or another member of the family does not suffer from time poverty, because there is an unequal distribution of available time at the household level and, of course, at the aggregate level. This can be studied only by analysing

poverty at an individual level, which is one of the main advantages of time-use data.

The definition of income is not easy. The best one could be 'the measure of individual control of the resources', which is not the same as individual income, for there is generally some common expenditure within households. However, contributions and decisions about resources are often unequal (Pahl, 1989; Sutherland, 1997).

There is no implication that available time is enjoyable or committed time is miserable. People may be bored or lonely in their free time but stimulated during work time, and greatly enjoy looking after their children or doing their job as a musician or any other activity. The distinction between available and committed time lies not in its subjective value but in the extent to which the individual has discretion over engaging in the activity in the short term (Burchardt, 2008).

4.4 Analysis of time poverty in Spain

This section analyses time poverty in Spain. First, we present the data and the methodology used to calculate time poverty. Then, we discuss the results of the poverty indicators for the population between 16 and 64 years old, and for those who are time and income poor. Additionally, we analyse the main variables determining the probability of being time poor.

In the last section, we analyse the time poverty of older adults and children, and finish with some brief policy implications derived from the analysis.

4.4.1 Data

The results of this work are calculated for the working-age population (16–64 years for basic descriptive statistics see Appendix 3), because different issues emerge when the activities of children and retirees are considered (Burchardt, 2008). However, we also provide some insights about the data for children aged 10–15 years and for individuals over 64 at the end of

this chapter.

The data are provided by the INE (National Statistics Institute) in SCV format, and we then implemented a cleaning and revision process to adapt the data to the study.

The data analysed refer to individuals aged 16 to 64 who completed a diary. We eliminated the observations of those whose total time equalled 0; weighting was thus considered to counter potential bias arising from non-responses. Furthermore, in order to obtain consistent results, we also eliminated data on individuals who reported having worked in the previous week but whose data on remunerated work was missing. After these calculations, the number of individual studies for participants aged 16–64 years was 20,011 for 2002–2003, and 11,684 for 2008–2009. However, we focus on the latter sample because it is the most recent dataset, and because the results of both sets are very similar.0.

As already mentioned, we also look at income poverty based on the information provided by the time-use survey. For this purpose, we made some adjustments to the income data. Spanish time-use surveys (STUS) provide income data at the individual level by intervals, including income data concerning the main job and the secondary job. In order to obtain one continuous income variable, we decided to generate a new income indicator by adding up the data of those two income sources, using the middle value of each interval. We are aware of the limitations of this income variable, and any conclusions should take these restrictions into account. Even so, we find it interesting to use income measures derived from STUS data and thus obtain results on both time and income, as they are two of the main constraints in people's lives (Burchardt, 2008).

4.4.2 Methodology

The traditional concepts and techniques used for the analysis of income or consumption poverty are applied to the use of time, following the World Bank study (2006) and traditional poverty research works Foster et al. (1984), as well as time-use studies (Burchardt, 2008; Wodon & Blackden, 2006). Traditional measures used for the analysis of income or

consumption poverty are applied to time poverty, for this allows making the same kind of assumption when we are measuring time and income. The headcount ratio (HCR) is the poverty indicator most widely used by governments and international organisations, despite its many limitations.

There are certain aspects related to measuring time poverty that may be useful in understanding conventional income-poverty measures used as time-poverty measures.

First, when measuring time poverty, we use data gathered at the individual level, while, in most cases, household data are studied to measure income poverty. Moreover, the STUS collect income data at the individual level, which can help identify individual income poverty (with some careful considerations), meaning we can explore intra-household allocations of time and income that are especially relevant when dealing with gender inequality. Secondly, the greatest challenge when studying time poverty is possibly to establish a time-poverty line. Often, when measuring income poverty, an absolute poverty line is determined according to a basket of basic needs. With time poverty, the proper level for the threshold is not so clear, and is very much influenced by the social context (Wodon & Blackden, 2006). For this reason, we use a relative poverty line, as well as economies of scale in consumption. However, even though it is clear that economies of scale exist at the household level, in terms of the amount of time required to perform domestic and care tasks benefitting all household members, this is not problematic for the measurement of time use. In fact, the minutes devoted to work by each individual can be easily calculated, and information on the time spent on domestic activities by each household member is also quite easily obtained(Burchardt, 2008).

We use the traditional headcount index, which informs on the share of population that is time poor (Foster et al., 1984). While the time-poverty gap takes into account the distance separating the time-poor from the time-poverty line, the squared time-poverty gap considers the square of that distance. When using the squared time-poverty gap, more weight is given to those who have extra-long working hours. Headcount ratio, poverty gap, and squared poverty gap are the first three of the FGT (Foster-Greer-Thorbecke) class-of-poverty measures. Their formulas include a parameter α that takes the value 0 for the headcount ratio, 1 for the poverty

gap, and 2 for the squared poverty gap in the following expression of the three different indicators.

Supposing we have a population of size *n* in which *q* individuals are time poor, the *headcount ratio* would be defined as:

$$HCR = \frac{q}{n} \qquad (1)$$

The headcount ratio represents the proportion of people below the time-poverty line, meaning they have levels of available time below a certain limit. In this case, the limit is determined by a relative poverty line.

Assuming that y_i represents the total working hours of individual *i*, and that the sum is taken only over those individuals who are time poor, the time-poverty gap (TPG) will be defined as:

$$TPG = \frac{1}{n}\sum_{i=1}^{q}\left[\frac{y_i - z}{z}\right] \qquad (2)$$

The time-poverty gap represents the mean distance separating the population from the time-poverty line, with the non-time-poor being given a distance of zero. Thus, the time deficit of the entire population is measured. The percentage of time required to not have any time-poor in the population can also be called total time deficit.

This index presents problems concerning inequality of time poverty between individuals. In order to solve these problems, the squared time-poverty gap is used, in which more weight is given to those who have extra-long working hours. It is defined as:

$$SPG = \frac{1}{n}\sum_{i=1}^{q}\left[\frac{y_i - z}{z}\right]^2 \qquad (3)$$

Note that, in this definition, poverty is considered to occur when an individual is below the time-poverty line (hence the $y_i - z$ value in the numerator), in the same way as in the income-

poverty literature: poverty occurs when a household is below a monetary threshold. In terms of interpretation, it is also worth noting that, in the same sense as monetary poverty measures, the (normalised) time-poverty gap needs not always be smaller than the time headcount index, and the squared time-poverty gap needs not be smaller than the time-poverty gap(Bardasi & Wodon, 2010).

We present a correspondence between time and income measures. Because there is less agreement on the benefits and costs of time spent working than on the value of higher consumption or income levels for households, the concept of time poverty may be challenged. (Wodon & Blackden, 2006).

The statement that poverty measures are censored makes such measures especially well adapted to the analysis of time poverty, as it allows considering only those who are time poor and no assumption is requisite for the comparison of working hours among individuals who are not time poor (Wodon & Blackden, 2006).

When we analyse time and consumption poverty, it is possible to define four groups of individuals. A first group, which is the focus of this contribution, consists of the time- and consumption-poor, those who spend a lot of time working to fulfil basic needs and who perform other work activities but are unable to rise above the consumption poverty line. At the opposite end, a second group, which is not of great interest for policy purposes, is represented by those who are neither time nor income poor. A third group is defined by those who are time poor, but not income poor. It is not clear whether these individuals who work long hours in a well-paid job are actually free to decide, i.e. free to reduce the number of hours they work in a linear manner. This might not be possible and they are forced to choose a combination of long hours and high income. In any case, we still believe that this group is less of a concern for the policy-maker than the time- and consumption-poor. The fourth group consists of individuals who are not time poor but are indeed income poor; many of them are underemployed who have time available to work in the labour market(Burchardt, 2008).

Something we must be very clear about is that the labour market is neither perfectly

flexible nor perfectly suited to the needs of people, in terms of schedule, qualification, type of contract, reconciliation policies. This means that, if a person is working, regardless of the number of working hours that should allow them to stand above the poverty line, the fact that they are nevertheless time poor can be due to labour market rigidities, the type of contract they have, or the type of job they perform on the other hand we have to take into consideration all the care responsibilities than cannot be externalised or doing by someone else.

4.4.3 Results

As we have already mentioned in the first section of this thesis work, there is no previous study of time poverty in Spain. There are time-use studies that look at certain aggregate time-use data (non-remunerated work, education, parents, valuation, etc.), but no work has yet addressed time poverty as such.

First, we analyse the time-poverty indicator, set at 60% of the median available time of the population between 16 and 64 years old (working age according to Spanish Labour Law). As mentioned before, the headcount ratio (HCR), poverty gap (TPG) and squared poverty gap (SPG) are all analysed. The poverty line is calculated at 130 minutes per day. This means that individuals with less than 130 minutes available per day are considered time poor. This limit is determined for people aged 16–64 years once the time devoted to paid work, unpaid work, personal care and studies is deducted.

Table 6 shows that 21.6% of the Spanish population aged 16–64 years are time poor (2009–2010). This means that 21.6% of the population between those ages have less than 130 minutes available per day for themselves. If we compare this result with those of the studies previously mentioned, we will see that the time-poverty rate in Spain is slightly higher than, for example, that of Ireland, which is 20% (McGinnity & Russell, 2007). Kalenkoski et al. (2011) studied data from the 2003–2006 United States Time Use Survey, and found that time poverty for the working population was at 20.35%. In the study by Tania Burchardt (2008), based on data from the 2000 United Kingdom Time Use Survey, 11.6% of the working

population was found to be time poor.

Looking at Africa, in the work by Bardasi and Wodon (2006) for Guinea based on 2002–2003 data, time poverty was established at 17.6% of the adult population. However, the latest survey in rural Mozambique finds time poverty to be around 47% (Arora, 2015). Hence, it is important to identify the particularities of each country in order to make comparisons.

The two latest studies measuring time poverty in the United Kingdom, using a similar definition of time poverty (with some adjustments) and data from the 2000 United Kingdom Time Use Survey, show time poverty to be 20% (Chatzitheochari & Arber, 2012). Qi and Dong (2018) analysed time poverty in urban China, using a different poverty measure, and found the rate to be at 27.4 % of the working population.

As indicated by the most recent time-poverty measures (even if there are limitations in the way they can be compared), time poverty in Spain is similar to that of other developed countries. Although most studies use a threshold set at 50% or 60% of the median available time, the categories of activities defined for calculating the available time are different. Moreover, some time-use surveys use diaries and others prefer questionnaires; consequently, all comparative analyses should be treated with caution. Two of the proposals of this work are the harmonisation of the activities that are used to calculate the poverty line, and the determination of the percentage that should be considered the limit to calculate time poverty.

The time-poverty gap measures intensity and the squared time-poverty gap measures depth. The time-poverty gap represents the mean distance separating the population from the time-poverty line, with the non-time-poor being given a distance of zero. It measures the time deficit of the entire population (as a proportion of the time-poverty line), i.e. the amount of time that would be required to shift all individuals who are time poor above a given time-poverty line through perfectly targeted ‘time transfers’. While the time-poverty gap determines the distance separating the time-poor from the time-poverty line, the squared time-poverty gap calculates the square of that distance. When using the squared time-poverty gap, more weight is given to those who have extra-long working hours. According to Burchardt’s studies, poverty

in the United Kingdom is at 8.1% of the population, while in Spain it is slightly higher.

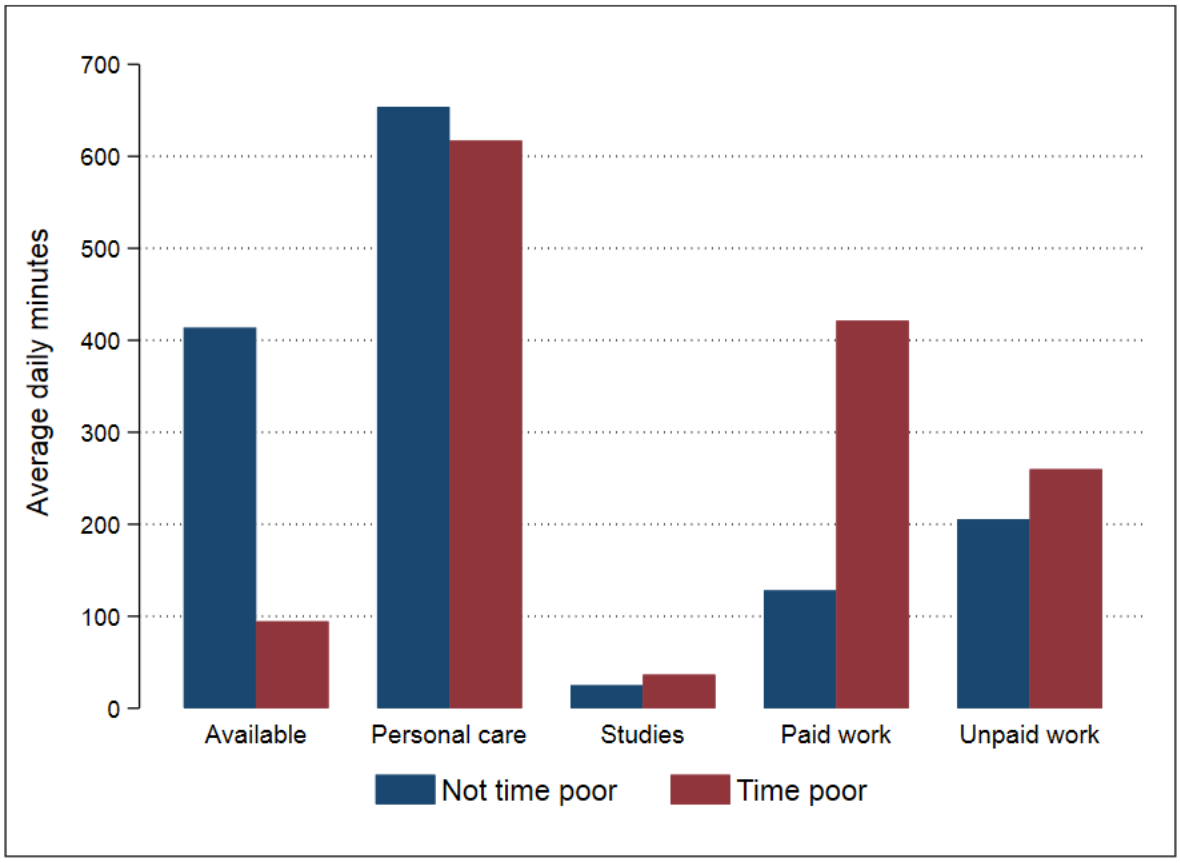
The depth is measured by the gap between the individual's time (or income) and the poverty threshold, expressed as a percentage of the value of the poverty threshold. Thus, a gap of 10% would indicate an average 10% shortfall below the poverty line for that group.

Table 6: Main time-poverty indicators

TIME POVERTY	%
Headcount ratio	21.6
Time-poverty gap	9.9
Squared time-poverty gap	6.7

Source: Own elaboration from 2009–2010 STUS data.

Figure 4: Average time between the time-poor and non-time poor



Source: Own elaboration from 2009–2010 STUS data.

It is also interesting to look at the distribution of time for those who are time poor in comparison with those who are not. The main difference concerns available time; the graph shows that those who are time poor devote more time to paid and unpaid work than those who are not time poor. If we look at personal care, the distribution is similar in both groups.

In relation to paid and unpaid work, the decline in mean hours is larger for paid than for unpaid work among those who are time poor, but also among those who are not. It means that the adjustment is mainly done through paid work, with unpaid work diminishing to a lesser extent because some activities cannot be outsourced. In other words, regardless of the situation,

there is a minimum requirement of unpaid work at the household level.

We are especially interested in people who are time poor and will now detail their main characteristics. Up to 58% of them are women; previous research has shown how women devote more time to unpaid work in all cases. It has been recognised worldwide through different time-use surveys that women spend more time doing household activities than men (ILO, 2018). Another characteristic of those who are time poor is that 75.6% of them live with a partner. As we will see in the next section, the couple effect has a negative impact on the time devoted to unpaid work, with economies of scale apparently lacking. In all situations, women spend more time than men doing housework, but the gender gap is widest among married couples. The time women spend doing housework is higher among cohabitants than among those who never married, and is highest in married couples and lower among divorcees and widows (Hasegawa & Ueda, 2019; Kandil & Périvier, 2017; South & Spitze, 1994), among others). There is a large body of literature on this matter.

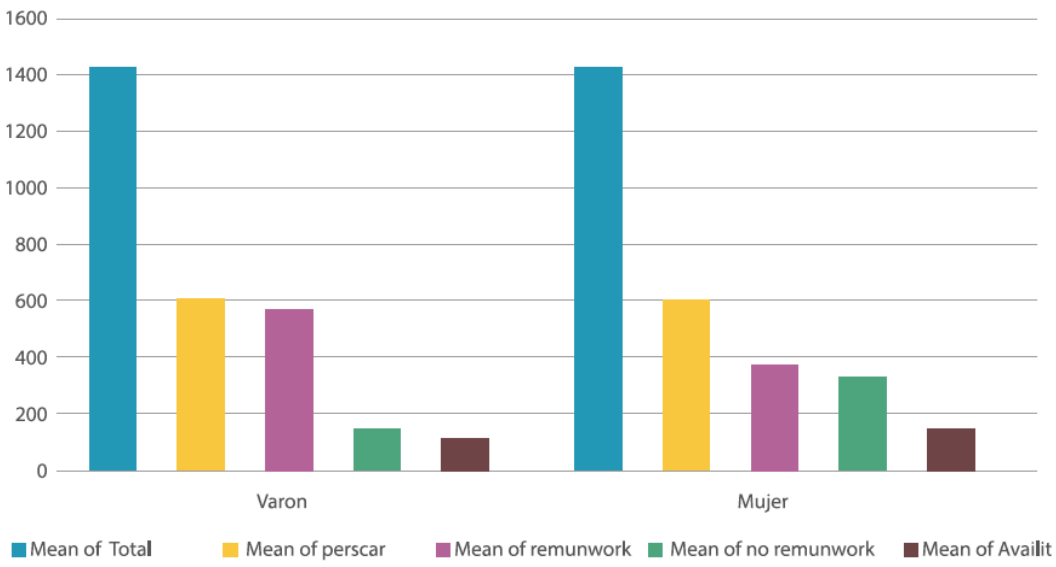
A total of 86.1% of the time-poor take care of children at the household level, which has an impact on care activities, for children under 10 years old demand a vast amount of care and supervision. Although there is the idea that parents nowadays are spending less time with children, some studies suggest that, in contradiction with conventional wisdom, both mothers and fathers spent greater amounts of time on childcare activities in the late 1990s than in the 'family-oriented' 1960s. For mothers, there was a decline in routine childcare time during the 1960s and early 1970s, and then a 1975–1998 rebound effect, along with a steady increase in time spent on more developmental activities. By 1998, fathers reported increased participation in routine childcare as well as in more 'fun' activities. These results suggest that parents have undergone a behavioural change that keep until nowadays that has more than countered any family change that might otherwise have reduced time spent with children (Gracia, 2014; Sayer, Casper, et al., 2004).

A total of 88.7% of the time-poor do full-time paid work, which represents a substantial

portion of total time, and 76.3% do not have a flexible schedule, which also has important implications in coordinating private and public responsibilities, and in feeling greater time pressure.

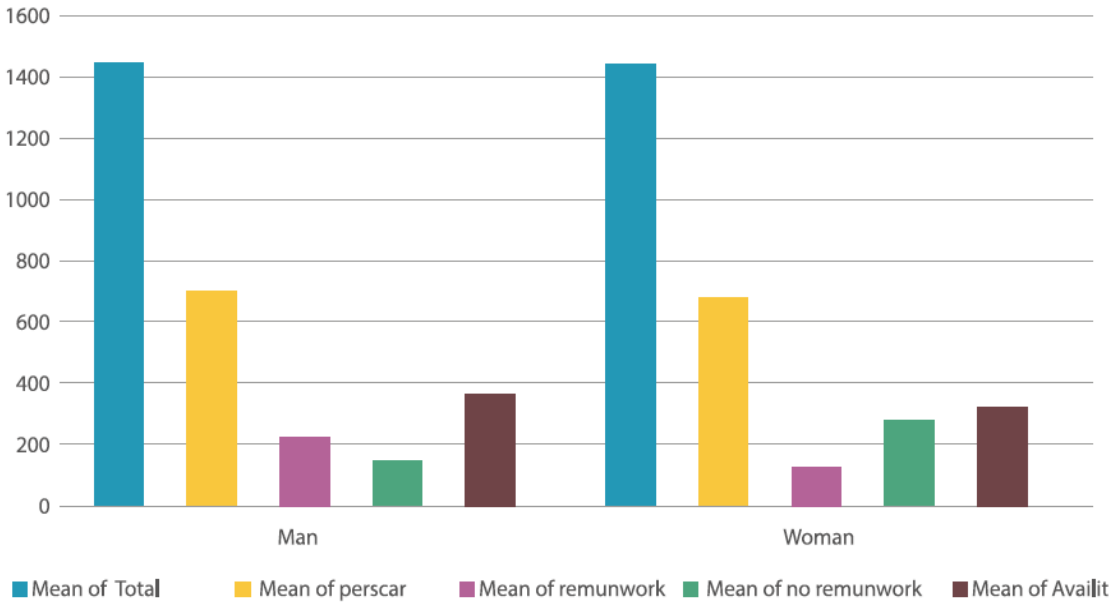
However, the previous graph only provides general information, while we need to look at the time-poor population in more detail. If we analyse the distribution of time poverty by gender we will find interesting results, as previous studies had already suggested (Burchardt, 2008; Wodon & Blackden, 2006).

Figure 5: Distribution of time poverty by gender



Source: Own elaboration from 2009–2010 STUS data.

Figure 6: Distribution of non-time poverty by gender



Source: Own elaboration from 2009–2010 STUS data.

Figures 6 and 7 compare those who are time poor with those who are not time poor by gender. In all cases, women devote more time to non-remunerated work, and this difference is more notable between men and women who are time poor. Personal care time remains constant for men and women in the two cases.

If we look at the time-poor, we may say that men are so because of the relative importance of paid work, whereas the cause for women is the relative importance of paid and unpaid work—the double burden that women experience. Even when women are active in the labour market, they do not neglect the responsibilities at the household level.

If we look at those who are not time poor, women still devote a higher proportion of time to unpaid work than men. This proportion is slightly lower than the one devoted by time-poor women to unpaid work, which confirms that unpaid work remains more or less stable for women. Moreover, the factor that partly explains the differences between these populations is paid work, which is lower for women in all cases when comparing the time-poor with the non-

time-poor.

According to these results and the previous ones obtained by Giménez Nadal and Sevilla, we can confirm the non-existence of 'iso-work' in Spain (Jose Ignacio Gimenez-Nadal & Sevilla, 2014). The results for Spain are also consistent with those provided by Burda et al. (2013), who found that gender equality in total work does not hold in predominantly Catholic countries. They are also consistent with the results reported by Burda et al. (2008). Here we add evidence of the gender difference in total work favouring men. In contrast with prior results, including Aguiar and Hurst (2007) for the United States and Giménez-Nadal and Sevilla (2012) for other developed countries, who find a decreasing trend in the gender gap in working time of most countries, our results may indicate that these time-use patterns could be specific to Mediterranean countries, compared with those of other developed countries.

Moreover, with regards to the non-time-poor, men have more average time available than women. Men enjoy a higher proportion of available and probably 'purer' time, since they have fewer care and supervision responsibilities, as was already mentioned in the first chapter.

However, these are preliminary analyses, and our intention is to look deeper at poverty indicators by gender, household composition and level of studies.

If we analyse poverty indicators by gender, we find, as expected, that time poverty is higher for women than for men. This can be observed in the following table, where 23.95% of women are time poor in comparison with 19.18% of men. As discussed before, this could be partially explained by the fact that women devote more time to non-remunerated work. This is also reflected in the poverty gap—which indicates how far, on average, the poor are from that poverty line—and the squared poverty gap—which determines the degree of poverty for a given area. This method squares the poverty gap for each individual or household, and highlights observations that fall far from the poverty line rather than those that are closer to it.

Table 7: Time poverty by gender

TIME POVERTY	SEX	%

Headcount ratio	Men	19.18
	Women	23.95
Poverty gap	Men	8.83
	Women	11.06
Squared poverty gap	Men	5.84
	Women	7.07

Source: Own elaboration from 2009–2010 STUS data.

As we can see on Table 8, it is also important to mention the differences in terms of poverty rates among the various kinds of households. The key features of Table 8 are the following. Time poverty in households with one adult and no children is higher than in those with a couple without children. There is a difference of nearly 3% between the time-poverty rate of couples with one child under 16 years and that of couples with more than one child below that age. There is also a nearly 4% difference between the time-poverty rates of these types of household: mother or father with one child under 16 years and mother or father with more than one child below that age.

The feature that we find most important to mention, if we compare the time-poverty rate of couples with children and mothers and fathers living alone with children, is that the time-poverty rate is higher for the former in the majority of cases. Only in one case is the time-poverty rate higher for mothers or fathers living alone with children—when there is more than one child older than 16—and the difference is not very high (17.04 vs. 17.49).

We think it is interesting to analyse the case of fathers or mothers alone with children younger and older than 16 years. In fact, in 72.6% of the cases, the woman is the head of the

family, a relevant conclusion in connection with the 'couple effect'. It means that having another adult in the household—in the majority of cases, a man—does not contribute to reducing poverty rates. In fact, it causes a deficit rather than a surplus of time. This is of great interest from a gender perspective.

Moreover, it is important to mention that, if we compare couples with no children and single adults with no children, we see that time poverty is quite similar for women and men—the difference appears with children and the care activities associated with them.

With regard to time poverty at the household level, it is interesting to underline that the headcount ratio for households with children below 10 years of age is 38.6%, while the ratio for those who do not have children to care for is only 19.9%, showing again the importance of non-remunerated work in being time poor.

Giménez-Nadal and Sevilla et al. (2010) found that the gender gap in total work is larger in households with children under 18 years old, compared with households with no children under that age. They also argued that femininity norms dominate masculinity norms in Spain with regard to childcare.

Table 8: Headcount ratio by type of household

HOUSEHOLD COMPOSITION	HCR (%)
1. One adult, no children	17.02
2. Couple, no children	14.87
3. Couple with a child younger than 16 years	27.26
4. Couple with two or more children younger than 16 years	30.63
5. Couple with a child older than 16 years	16.49
6. Couple with two or more children older than 16 years	17.04
7. Father or mother with a child younger than 16 years	24.15
8. Father or mother with two or more children younger than 16	27.49

9. Father or mother with a child older than 16	12.76
10. Father or mother with two or more children older than 16	17.49
11. Other types of household	23.33

Source: Own elaboration from 2002–2003 STUS data.

In relation to the level of studies, it is worth evaluating time-poverty rates as presented in the following table. We observe that higher levels of education are accompanied by higher levels of time poverty. Here, the impact is arguably related to the time devoted to remunerated work, which increases as the level of education rises. Only at the highest level of education do we find a slight reduction of time poverty that can be explained partially by the higher income, as will be analysed in the next section.

Table 9: Headcount ratio by level of education

LEVEL OF EDUCATION	HCR (%)
1. Illiterate	10
2. Incomplete elementary studies	17.06
3. Elementary studies or equivalent	19.63
4. First years of high school studies	20.37
5. High school studies	22.19
6. Middle-level vocational training	23.17
7. Higher-level vocational training	26.43
8. First cycle of university studies	27.74
9. Second and third cycles of university studies	23.04

Source: Own elaboration from 2009–2010 STUS data.

Income is one of the key variables because of the trade-off between income and

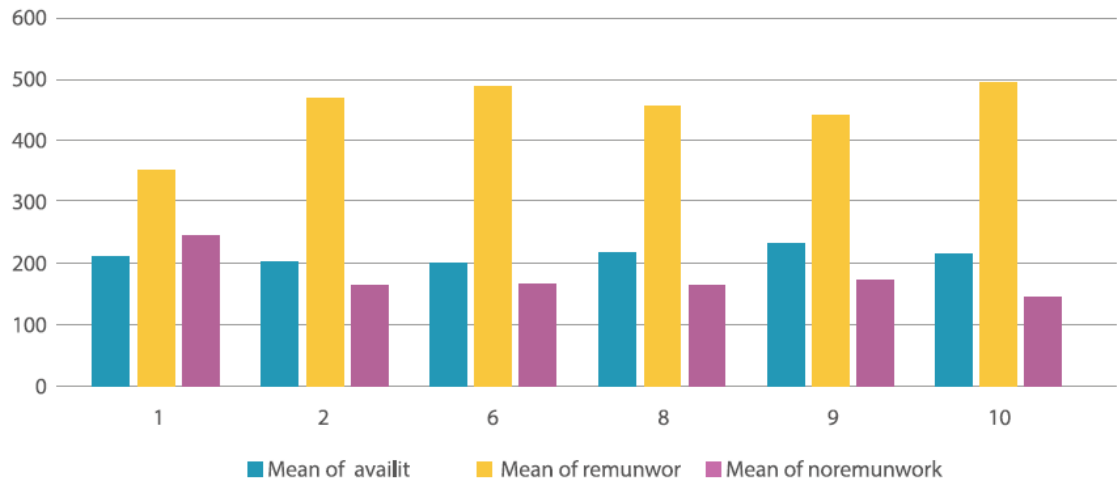
time(Burchardt, 2008). We therefore analyse the relation between available time and income by quintile of income. On Figure 9, we can observe that available time among the lower decile groups is higher than further up the income distribution. This was to be expected, since those with the lowest income are also less likely to be in paid work, as shown in previous results.

However, an interesting finding is revealed if we compare the two extremes, where available time is just a bit higher in the bottom decile than in decile 1. Also, the peak time in the lower deciles is spent on non-remunerated work, while in deciles 9 and 10 the peak is devoted to remunerated work.

These results are consistent, because in higher income groups people can use some of their income to outsource their domestic and care responsibilities, instead of providing the work directly themselves. However, the results also reflect differences in population composition; thus, in the first deciles we find families with more children and, consequently, a higher demand of care.

This work focuses especially on individuals in decile 1, because they have both time and income restrictions. In decile 10, the participants are confronting time poverty, but they arguably spend more hours working than what is strictly required to earn a 'decent' or appropriate income.

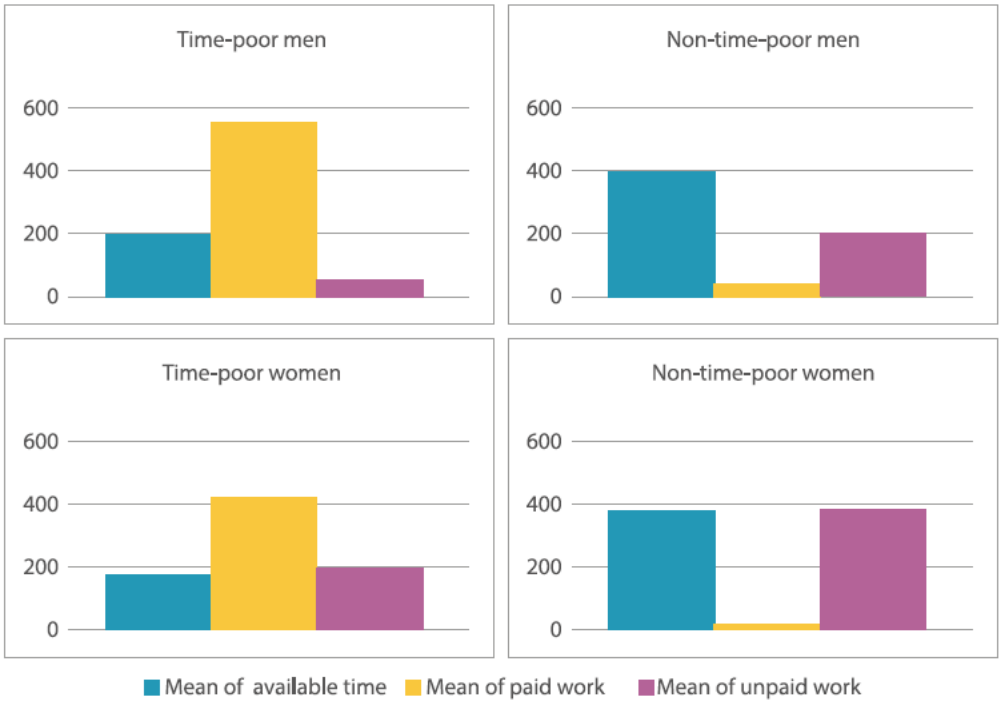
Figure 7: Distribution of time by income decile among the time-poor and the non-time-poor



Source: Own elaboration from 2009–2010 STUS data.

To get a better picture of how time is distributed, it is also interesting to analyse how available time is allocated by gender between those who, in the time-use survey, declared that they were employed the previous week and those who did not work in that period.

Figure 8: Distribution of available time by gender


Time-poor men
600
400
200
0
Non-time-poor men
600
400
200
0
Time-poor women
600
400
200
0
Non-time-poor women
600
400
200
0
Mean of available time
Mean of paid work
Mean of unpaid work

Source: Own elaboration from 2009–2010 STUS data.

If we observe the results presented in Figure 10, we can see that women generally dedicate more time to non-remunerated activities than men. However, what we find most interesting is that, among those unemployed in the labour market, women devote to unpaid work more than double the time devoted by men. Even if they have time available because they are not in the labour market, men do not take on the same degree of responsibility at the household level as women do, which also explains why women are more time poor than men. However, a more detailed study is required for further understanding of the dynamics of work and time poverty.

4.4.3.1 Time and income poverty

One of the main objectives of this work is to put the focus on those who are more vulnerable, those who suffer time as well as income poverty.

Information on household incomes in Spanish time-use surveys comes in various forms. A general question asks respondents to indicate into which of eight consecutive ranges their gross household income falls. This method has three limitations with regard to the present analysis: it provides gross incomes rather than disposable incomes; it is in intervals rather than in exact amounts, which makes it difficult to manipulate, for example, to adjust the differences in household size; and the responses are of doubtful accuracy.

It is important to mention that we have included a household income variable in the

analysis. There are important contradictions in the variable income at the individual and household level; for example, individual incomes are in some cases higher than household incomes. As our focus is on the individuals, we decided to use the variable as gathered from the individual questionnaire.

We already explained in the first section that the income-poverty line in this work was calculated using income data from the main and the secondary job. The income variable is presented in intervals, and takes and adds the medium value of both income sources. We are aware of the limitations of this income measure, but the objective is mainly to create a parallelism between the income and time-poverty measures at the individual level.

While establishing the poverty line and looking at those who are income poor according to the information provided by the Spanish time-use surveys, it is worth remembering that these are not household surveys. However, it is important that we use data from the same survey, also and most important because we can construct household data from individual income data, even if they are not as accurate or complete as those gathered through household surveys.

We also find limitations related to the data themselves. It would be ideal to have data on income and assets at both the individual and the household level, as well as a variable indicating control over the resources.

The individual income-poverty rate, using a threshold set at 60% of the median income, shows that 10.36% of the population in Spain aged between 16 and 64 are income poor, and, if we look at the data from a gender perspective, we will notice that women are poorer than men. The difference is significant in the headcount ratio: 4.43% of men and 17.43% percent of women are income poor. This difference is also reflected in the other two indicators: poverty gap and squared poverty gap. This is mainly explained by the care responsibilities taken on by women, which have an impact on their opportunities and capacity to access the labour market.

Table 10: Income-poverty headcount ratio

INCOME POVERTY	SEX	%

Headcount ratio	Men	4.43
	Women	17.43

Source: Own elaboration from 2009–2010 STUS data.

In terms of policy-making, those who are time and income poor are especially interesting. However, the percentage of population they represent is not very high: only 1.38% of the population aged 16–64 are both time and income poor, which is similar to the results obtained by Kalenkoski (2.18% for the United States in 2010) (Kalenkoski et al., 2011) and Burchardt (1.78 % for the United Kingdom) (Burchardt, 2008).

However, there are some important elements worth mentioning: 85.1% of the time- and income-poor are women; 77.7% have secondary education studies; 95.6% say they have not worked the previous week; 69.5% live in a household with their partner and two or more children over 16 years; and 85.7% have children to take care of.

As expected, some of these characteristics are similar to those of people who are just time poor, given that those who suffer greater time and income poverty are women who live with their partner and have children to care for. In this sense, further studies should be conducted on the importance of the disadvantaged situation of women in relation to men. This type of study would allow us to understand whether the time-poor are so because they devote 'too much' time to remunerated work, because they want to earn higher salaries, because of lack of flexibility in the labour market, or because of social conventions, among other possible reasons.

Those who are both time and income poor spend a much higher proportion of their time on unpaid work (childcare, taking care of others, etc.), while the time-poor do more paid work. This is an important but not surprising observation: spending a larger amount of one's time on unpaid activities is likely to create a higher risk of income poverty, all other things being equal. Needless to say, unpaid activities are not necessarily less valuable in a social sense, but they are simply not part of the market economy (Burchardt, 2008).

4.4.4 Model

In order to evaluate the probability of being time poor at a specific point in time (2009–2010), we ran probit regressions that explain the probability of being time poor as a function of personal, household, and employment-related variables.

The analysis was again carried out at the individual level; in other words, each individual was classified as being time poor or not depending on their own individual total committed time.

In this subsection, we evaluate the probability of being time poor using a probit model. The main reasons for using a probit model is that our dependent variable can take the values 0 and 1, and that this method is widely used in time-use studies.

As mentioned before, the dataset is analysed at the individual level for a population aged 16 to 64 years. With the focus set on time poverty, we create a dummy variable that takes the value 0 for those who are not time poor, and 1 for those who are time poor. We estimate separate regressions for men and women.

The probit model is a type of regression where the dependent variable can take only two values. The purpose of the model is to estimate the probability that an observation with particular characteristics will fall into a specific category. Moreover, classifying observations based on their predicted probabilities is one type of binary classification model.

Probit regressions are used to model dichotomous or binary outcome variables. In the probit model, the inverse standard normal distribution of the probability is modelled as a linear combination of the predictors. Probit fits a maximum-likelihood probit model.

In probit regressions, we model the (conditional) probability of being time poor (being time poor =1), that is, Yi = 1,

$$P[Yi=1|X1i,\ldots, XKi; \beta0,\ldots, \beta K] = \Phi(\beta0 + \sum k = 1K\beta kXki)\ P[Yi=1|X1i,\ldots, XKi; \beta0,\ldots, \beta K] = \Phi(\beta0 + \sum k = 1K\beta kXki)$$

where $\Phi(\cdot)$ is the cumulative distribution function of the standard normal distribution.

This basically determines, depending on the regressors, the probability that the outcome variable, Yi, is 1, i.e. a certain function of a linear combination of the regressors.

The variables used to evaluate the possibility of being time poor are presented in the following table.

Table 11: Variables used to evaluate the possibility of being time poor

PERSONAL VARIABLES	
Female (d)	Sex
Age	Age
Basic studies (d)	Level of studies: basic or not
HOUSEHOLD VARIABLES	
No. of members < 10	Number of members in the house < 10 years old
Childcare	Household with children who need personal care
Living with a partner (d)	Living with a partner
Dependent adult	Household with dependent adult who needs personal care
Domestic service (d)	Household with domestic service
EMPLOYMENT VARIABLES	
Employment	The person did paid work during the previous week
Flexible work schedule (d)	The person has a paid job with a flexible time schedule
Full-time job	The person has a full-time paid job
Part-time job	The person has a part-time paid job
Uninterrupted work schedule	The person has a paid job with an uninterrupted schedule

* Dummy variables are denoted by (d).

We will now explain each of these variables:

A) Individual variables:

A1) Sex: A fundamental finding in time-use surveys is that women spend more time on unpaid work than men, which has implications in terms of time poverty. Therefore, it is the foremost variable to be considered.

A2) Basic studies (d): Having basic studies or not can have a great influence on time poverty, in relation to the capacity of getting better jobs with a higher salary, more negotiating power, etc.

A3) Age: As mentioned when we analysed the descriptive statistics, time use changes accordingly with the life cycle, for example: the time dedicated to a 10-year-old is different to that spent with a 15-year-old.

B) Household variables:

B1) No. of members < 10: Because taking care of children below 10 years old is more demanding than taking care of older children.

B2) Childcare: Children need looking after and this has important implications for non-remunerated work and also for the possibility of entering the labour market.

B3) Living with a partner (d): As seen from the descriptive data, living as a couple means less available time for women; this is the so-called ‘couple effect’.

B4) Dependent adult: This entails more housework and care responsibilities at the household level, because in most cases dependent adults are unable to contribute to the total amount of work in the household.

B5) Domestic service (d): Having or not having domestic help has implications for time dedicated to non-remunerated work and, consequently, for time poverty.

C) Employment variables

C1) Employment: To be employed in the labour market represents a large part of the total work, and it is therefore crucial to include it in the model.

C2) Flexible work schedule (d): Flexible working hours allow for better coordination and reconciliation with non-remunerated work.

C3) Full-time job: If people work full time (8 hours or more, with a fixed schedule), it may be complicated to reconcile or coordinate with other activities, especially those related to care or those performed at household level.

C4) Part-time job: Conversely, working fewer hours on remunerated work frees up more time for non-remunerated work or other activities.

C5) Uninterrupted work schedule: If the working hours are concentrated in a period of the day, it has an impact on valuable time and on how responsibilities are distributed.

As explained in the methodology section, we analyse the probability of being time poor using the key variables that define this condition. The table shows the marginal effects for both the variables and the dummy variables, with (d) representing the marginal effect when the dummy variable changes from 0 to 1. We calculate the predicted probabilities of being time poor by using the margins command below (margins command in Stata) and holding all other variables in the model at their means.

We run three probit models: one for the total population (16–64), one for men and one for women.

Table 12: Probit results

VARIABLES	ALL	WOMEN	MEN
Female	0.1088906***		
	(0.00773)		
Age	-0.000994	-0.0009032*	-0.0011206**
	(0.00036)	(0.00051)	(0.00051)
No. of children < 10	0.0638036***	0.0822111***	0.0407486***
	(0.00594)	(0.00845)	(0.00827)

Childcare	0.0390727**	0.0364929	0.0409089*
	(0.1571)	(0.02249)	(0.02152)
Employment	0.2680575***	0.2998113***	0.2223091***
	(0.01301)	(0.01899)	(0.0184)
Living with a partner	0.0266379**	0.028701**	0.0204774
	(0.00935)	(0.01276)	(0.01392)
Dependent adult	0 .046946**	0.0713111***	0.0198631
	(0.01833)	(0.02665)	(0.02577)
Flexible work schedule	-0.0125763	-0.0329133*	0 .0045948
	(0.01151)	(0.01692)	(0.01503)
Full-time job	0.0960095***	0.0888484***	0.1111008***
	(0.01674)	(0.01674)	(0.01899)
Uninterrupted work schedule	-0.0249361**	-0.0249361*	-0.0234513**
	(0.00858)	(0.01366)	(0.01051)
Domestic service	-0.00064	-0.0077046	0 .0084827
	(0.01346)	(0.01955)	(0.01814)
Basic studies	-0.0293139***	-0.0269967**	-0.0298**
	(0.00797)	(0.01176)	(0.01046)
Observations	11,684	6,285	5,399
Pseudo R2	0.1667	0.1547	0.1820
Robust standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

The results obtained are mostly in line with those of previous studies. As expected, considering previous results and studies (Wodon & Blackden, 2006), women have a 10.7% greater likelihood of being poor than men. Time poverty is higher for women and they devote more time to non-remunerated work. Furthermore, time devoted to unpaid work increases the probability of being time poor by 25%. As seen in the graphs, time spent on unpaid work

reduces the amount of available time (these two variables are significant with a p value < 0.001).

Living as a couple is positively related to time poverty. As explained when describing the poverty indicators by type of household, living with a partner increases the poverty rate in comparison with living single. We should mention that the head of the family in the households of those who live alone taking care of children is in most cases a woman. When we look at the model by gender, this variable appears as significant only for women. Thus, arguably, the presence of an extra adult—a man in most cases—as a partner in the household increases the probability of being time poor and not the other way around.

Also important is the fact that the presence of a dependent adult in the household is positively related to being time poor. This result was expected because, according to their level of dependence, dependent people need help to carry out their personal daily life activities. Again, when the model is analysed by gender, this variable appears as significant for women (p value < 0.001) and not for men.

The presence of household members under the age of 10 is also positively related to the probability of being time poor, because children, at the household level, demand an important amount of non-remunerated work. When we look at the model by gender, the childcare variable appears as significant for both men and women, as men are progressively more involved in childcare responsibilities (for all cases, p value < 0.001).

Having flexible working hours is positively related to time poverty only for women. We find no causal relationship here; it could be that those who have a flexible work schedule are more time poor than those who do not, but, on the other hand, time-poor individuals may have requested a flexible schedule.

With regard to the employment variables, having employment and working full-time is significantly and positively related to the probability of being time poor for men and women. The importance of the proportion of total time devoted to remunerated work and its impact on available time has already been mentioned (significant in all cases, p value < 0.001).

A significant finding, especially related to labour policy, is that time poverty is negatively related to having a job with an uninterrupted working day schedule, which in most cases reduces the total time at work and could reduce time poverty.

As for the level of studies, we find that having higher studies increases the probability of being time poor, due to longer hours spent on paid work and to being in the 10th income decile. This is especially so by gender. It was already shown in the descriptive statistics section that women with higher levels of education obtain better employment positions. They have to manage the 'double burden' of paid and unpaid work, because, as shown above, even if incorporated into the labour market, working the same amount of hours as men, women spend more hours on household and care work, and in consequence exhibit higher total work times.

We also aimed at analysing the likelihood of being both time and income poor. However, due to the low number of cases, the coefficients are not significant, but they follow the same pattern as time-poverty coefficients.

4.4.5 Other groups of interest

The majority of studies on time poverty analyse the working-age population or the entire population of the survey. In this section, we describe the characteristics of older adults and children to get a complete overview of time use in Spain in 2009–2010. The main objective of this section is to study briefly time poverty among children and older adults, addressing their specificities.

In the case of older people, we refer to those who are older than 65 years, which is the legal age of retirement in Spain. This, however, is problematic, because, once paid work is removed from the equation, we can find some extreme scenarios, like people having too much time available, or assuming too many responsibilities in taking care of children or other older adults.

It is also problematic to study time poverty in children, because in most cases the decisions concerning the use of their time are not taken by them, but by someone else, usually

their parents. However, we find it interesting to evaluate whether the time poverty experienced by the parents affects or not the way children spend their time.

4.4.5.1 Time use of older adults

In the 21st century, the ageing process is generating higher social and economic demands, at the same time as older adults provide important economic and social resources that should be taken into consideration, especially with regard to unpaid work. The work carried out by older adults is, in most cases, invisible, and time-use surveys allow a better understanding of what they do and how they contribute to society.

Older adults are complex to study as they are a very heterogeneous group with very different circumstances and varied lifestyles. There are substantial differences between those who are just 65 years old and those who are nearly 80.

Results from studies on the use of time among older adults may capture changes in the activity models over time, which may provide valuable information on the well-being of older adults, for use in developing adequate social spaces. Such information may also be applied to formal and informal caregivers, with the aim of assuring continuous improvement in the services provided by these professionals, and also in the relationships between caregivers and older adults (Ujimoto, 1990).

Population ageing is in progress in nearly all countries in the world. Ageing results from decreasing mortality and, most importantly, declining fertility. This process leads to a relative reduction in the proportion of children and to an increase in the share of working-age people and older persons in the population. The global share of older people (aged 60 years or over) increased from 9.2% in 1990 to 11.7% in 2013, and will continue to grow as a proportion of the world population, reaching 21.1% by 2050 (WHO, 2015).

The older population is predominantly female. Given that women tend to live longer than men, older women outnumber older men almost everywhere. Globally, there were 85 men per 100 women in the age group of 60 years or over, and 61 men per 100 women in the age

group of 80 years or over (WHO, 2015).

The progressive ageing of Spanish society poses a major socioeconomic and political challenge to the welfare state. In recent years, Spanish demography has shifted towards progressive ageing from the perspective of both its greater extent (increase in the ratio of people over 65 years) and its greater intensity (increase of life expectancy in old age) (Serrano, Latorre, & Gatz, 2014).

In 2012, there were in Spain 8.2 million people aged over 64 years, which represent 17.4% of the total population, while the number of people over 79 years was 2.5 million, i.e. 5.3% of the total population. According to the INE's population projections (2012), by 2052 this ageing process will be greatly exacerbated. The proportion of people over 64 years is expected to reach 37% of the total population residing in Spain, while the percentage of those over 79 years is expected to rise to 15.7%. Following the same projections, life expectancy at birth will increase to 86.8 years for men, and to 96.8 for women. As this group is gaining in importance, more efforts should be made to collect adequate data providing clear information on it.

In recent years, the rapid growth of unemployment and the increasing impoverishment of the population has produced a significant change in the composition of households and household income. Intergenerational solidarity has experienced a major shift, making the resources of older people the main and sometimes sole family support. Thus, in the third quarter of 2012, the reference person in 26% of households was a retiree with a pension (INE).

In any event, it is worth remembering that this relationship of dependence between the older and younger members of families was, to a certain extent, already occurring during the previous decade. In addition, domestic workers, mainly immigrant older women, are taking care of young children, which is a good way to offset the weak public structure of nurseries for 0- to 3-year-olds and to enable women with children to stay in the regulated labour market. This phenomenon has been called the 'slave grandmother syndrome' (Villar, Celdrán, & Triado, 2012), a supportive relationship that is increasingly earning greater social relevance.

Time-use data are a powerful tool to take all this into consideration.

International studies on the use of seniors' time started in the early 1960s, coinciding with the interest in the concept of 'successful ageing', which has stimulated the production of numerous investigations to the present (Everard, Lach, Fisher, & Baum, 2000; Rowe & Kahn, 1998). Successful ageing is related to variables such as quality of life and good health, and many researchers have empirically tested the relationship between time-use and well-being indicators (Larson, 1978).

Although research on time use has a relatively long history, beginning in the early 19th century, most of the literature in this field has, thus far, not focused on older adults. Other data sources allowed the analysis of national models of people in retirement age, but not many analyses have been made on the use of time after retirement, and particularly those that take under consideration the time that older adults spend on non-remunerated activities, which, as mentioned before, is of great importance.

Gauthier and Smeeding (2001) conducted a transnational study on the use of time by the senior population. They reviewed data from nine countries: Canada, Finland, Germany, Italy, Japan, the Netherlands, Sweden, the United Kingdom and the United States, in the period from 1985 to 1996. Its objective was to describe variations in people's use of time across different countries and to examine model changes associated with ageing. The results showed large differences between countries and time uses, but notable similarities in the activities related to age. While time devoted to paid work decreases with age, time spent on passive recreation and personal activities increases. Active leisure also augments with age, but to a lesser degree (Gauthier & Smeeding, 2001).

More recent , the SHARE project (Survey of Health, Ageing and Retirement in Europe) has analysed the use of time among older people. Some results of the first wave have been published in *Survey of Health, Ageing and Retirement in Europe*. A chapter entitled 'How Do European Older Adults Use Their Time?' describes the time use of the seniors in different European countries (Denmark, Sweden, Germany, Austria, France, Switzerland, Belgium, the

Netherlands, Spain, Italy and Greece). The results of this project, published in April 2005, show differences between countries, as did the study by Gauthier and Smeeding (2003). It also notes that the contribution to economic activity by older adults is not limited to the labour market, and that the number of hours spent by them on the care of grandchildren is highly significant. There are other specific studies related to how older adults spend their time on transportation, dementia caregiving, etc. (Enam, Konduri, Eluru, & Ravulaparthy, 2018; Juarez, 2010; Nordberg et al., 2007; J. E. Spinney, Scott, & Newbold, 2009; Tacken, 1998).

Retirement triggers a new scenario for men over 65 years old. Identification with employment disappears at once and is replaced by leisure. In women, this sudden leap does not occur (in general), although identification with domestic work is maximum (María Ángeles Durán Heras, 2010), as will be seen in the following analysis.

Time use of Spanish older adults

There are few specific studies on the time use of older adults. Most analyse the whole population and dedicate a section to those aged over 65 years. Thus, further research on time use by the senior population is required.

In Spain, some studies have taken into account the importance of age as a variable affecting the use of time. R. Ramos (1990) and Page (1996) analysed the importance of age in the use of time, and the results of their works indicated that time spent on essential needs narrows until the age of 45, and then begins to increase progressively until it reaches a peak among older adults. Moreover, they found that dedication to domestic work begins to diminish after the age of 45, and that available time is lower among the middle-aged population and higher in the extremes.

Ramón Ramos (1995) made an important contribution to the study of time among the elderly in Spain. In the collective work *Las actividades económicas de las personas mayores* (*Economic activities of older people*) (SECOT, 1995), he authored a chapter devoted exclusively to the use of leisure time and accounting for the results of the survey conducted by the CIS in 1987 (Employment, leisure and their use of media communication in Spain). María

Ángeles Durán studied the sharing of domestic tasks using different variables, and found that age, interacting with gender, has a significant impact on the time dedicated to domestic work and the way free time is spent (María Ángeles Durán Heras, 2010). She analysed the 2002–2003 Spanish Time-Use Survey following the Eurostat procedure and another survey conducted by the CIS on the same period, and concluded that the age of retirement is not associated with a decrease in work for women, since women retirees continue to dedicate to work an average of four hours a day. She also found differences in the way older adults spend their time according to the autonomous community (NUTS II) they live in (María Ángeles Durán Heras, 2010).

If we look at the descriptive statistics in Table 13, we can see that time devoted to personal care is higher in the 16–64 years group, in the sense that they spend more time on activities such as having a bath, eating, etc. As expected, we find a sharp decrease in the minutes spent on paid word as a consequence of being retired. If we look at unpaid work, there is a slight increase in the mean number of minutes spent on it at older ages. In consequence, as expected, available time is higher for older adults than for the working population. Here, an important issue emerges in relation to having too much available time: these individuals may experience a lower level of well-being, because they do not know what to do with their own time, i.e. passive leisure could increase with an impact on health status.

Table 13: Distribution of mean time among people aged 18 to 64 and people over 64

	18–64-year-olds (11,684 observations)	Older than 64 (4,036 observations)
Personal care	661.4	760
Paid work	234.48	6.2
Unpaid work	224.95	227.28

Available time	295.09	446.3

Source: Own preparation from 2009–2010 STUS data.

The following table shows how time is distributed between older men and women.

Table 14: Mean time spent on the main groups of activities by older adults over the age of 65

< 65 years	Personal care	Paid Work	Unpaid work	Committed time
Men	771.90	10.22	159.83	941.96
Women	751.05	3.22	278.28	1.032.55
Total	760.01	6.23	227.39	993.62

Source: Own preparation from 2009–2010 STUS data.

If we look at the mean time that both genders dedicate to the main activities, we can observe that there are still substantial differences in non-remunerated work among older adults, and that the sexual division of work at the household level is maintained. This means that men who did not participate in unpaid work before, continue not to do so after retirement. This non-involvement in this age and gender group is apparently 'justified' by their not having engaged in unpaid work previously (the difference between women and men is of more than 100 minutes per day).

A more detailed analysis of non-remunerated work is shown in Table 15:

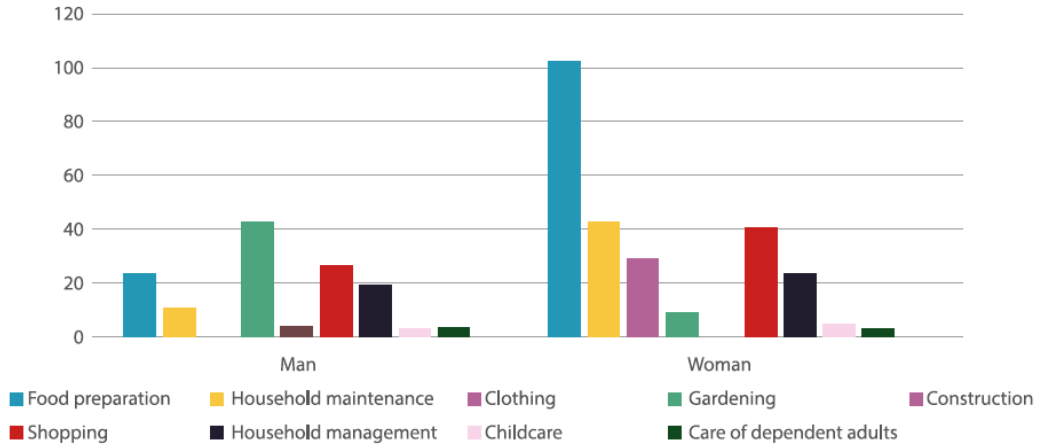
Table 15: Mean time spent on unpaid activities by men and women over 65 years

Sex	Food	Maintenance	Clothes	Garden	Construction	Shopping	Management	Children	Adult
Men	28.93	10.70	1.03	41.29	7.60	33.15	16.85	6.33	6.46
Women	105.99	45.01	28.52	10.86	0.69	38.95	26.89	8.17	5.79
Total	72.88	30.27	16.71	23.94	3.66	36.46	22.58	7.38	6.08

Source: Own preparation from 2009–2010 STUS data.

There are significant differences in the average time spent by women on unpaid work. Women spend more time than men preparing food, maintaining the household, doing activities related to clothing, management of the household, and childcare, while men dedicate more time than women to activities such as construction, gardening, and the care of dependent adults. The main differences are found in food and all the activities related to clothing. It is worth noting that time spent on these tasks may also be hidden within care activities, for example, preparing food for grandchildren. Thus, we believe that specific tools should be used to better collect time-use data from older adults; this will be discussed in the following chapter. In summary, we can conclude that the most important activities carried out by women are critical for the sustainability of the household.

Figure 9: Average time on unpaid activities by gender



After analysing the data, we can also conclude that it is important to promote time-use studies on older adults, focused on gathering adequate time-use data, mainly related to care outside of the household, health status, too much free time, and responsibilities with grandchildren.

Time poverty and older adults

In this subsection, we use a time-poverty indicator that is equivalent to the one applied to the 16–65 age group. It is defined by the fact that some individuals do not have enough time for rest and leisure after taking into consideration the time devoted to unpaid work and personal care. As we have done before, we consider a relative poverty threshold set at 60% of the mean available time.

However, there are important methodological and conceptual aspects that should be considered in further research works. The results show that the time-poverty index for older men is 6.9%. versus 10.43% for older women. The main characteristics of those who are time poor are the following: 66% are women; households with a higher number of members are more time poor; and, what is even more striking, 100% of the households where older adults are responsible for taking care of children below the age of 10 are time poor. These preliminary results allow us to reflect on the role of grandparents taking care of grandchildren. However, more detailed and updated data are needed in order to draw clear conclusions.

In summary, these results suggest that time poverty or lower availability of time in older

adults is related to the existence of care responsibilities, either because they live with more family members, or because they have total or partial responsibility over the care of children under 10 years old.

More studies on how older adults spend their time are required to analyse the dilemmas associated with time poverty and having too much available time. It is also necessary to adapt the data collection tools to this specific age group, an issue that will be addressed in the last section of this thesis work.

4.4.5.2 Time use of children

The way children spend their time has important implications for their cognitive and non-cognitive development. Activities such as participating in teams or extra-curricular engagements can contribute to their development. Sports and other pro-social activities promote positive development by creating opportunities for belonging, helping others, and skill building (Fredricks & Eccles, 2006).

Differences in time use in children affect their skill development, and we expect to observe an association between participation in activities in early life and later life outcomes. However, there is scant literature exploring the way time poverty (and stress) may affect children's well-being and their current and future development. In contrast, there are many studies on how the educational, employment and socioeconomic level of parents affects the way children spend their time.

Research on children and adolescents argues that studying an individuals' time-use allocation before they reach adulthood provides key evidence on their present and future well-being (Hofferth, 2010). Activities such as doing homework or reading are well-established as positive practices for children's present and future school performance and accumulation of human and cultural capital (Bianchi & Robinson, 1997). On the other hand, 'too much' time spent on watching television predicts adverse effects on children's educational performance and social capital (Hancox, Milne, & Poulton, 2005).

The work by Rees (2017) explores similarities and differences in the daily activities of children around 12 years old in 16 developed and developing countries. The analysis suggests systematic differences between countries in the frequency of children helping around the house and caring for family members, with these activities being more common in lower-income countries. There is a diversity of patterns of education-related time use across countries, including attending formal classes, doing homework and studying with family and friends. Leisure activities such as sports, watching television and using computers are more common in high-income countries. In these countries, there is not a simple trade-off between physical and screen-based activities. Finally, there is evidence of fairly consistent gender differences in time use across this diverse range of countries, with girls typically spending more time helping in the house, doing homework and reading, while boys tend to spend more time playing sports and using computers (Rees, 2017).

Concerns have been raised about the amount of time that children spend on sedentary indoor screen-based activities, as well as about whether this time is increasing at the expense of outdoor physical activity, and whether it has adverse impacts on children's health. There is evidence to support the notion that different kinds of activities have different health outcomes (Janssen & LeBlanc, 2010). However, there are no clear trends in relation to the different activities performed by children and young people across countries (Rees, 2017).

The study 'International Trends in Adolescent Screen-Time Behaviours from 2002 to 2010' analysed temporal trends in TV viewing and computer use among adolescents across 30 countries. Between 2002 and 2010, TV viewing decreased slightly in most of the 30 countries, among both boys and girls. This decrease was more than offset by a sharp increase in computer use, which was consistent across all countries (Bucksch et al., 2016).

With regard to physical activity, recent time studies have analyses it through self-reports and accelerometers in youths (2–18 years old). The available evidence does not firmly support the notion that physical activity has declined over recent decades (Ekelund, Tomkinson, & Armstrong, 2011).

Furthermore, studies have also looked at children's housework activities in a context of time stress (Gager, Sanchez, & Demaris, 2009). According to previous research, we expect to find that girls devote more time to household tasks than boys, which affects their available time (Bianchi & Robinson, 1997; d'Adda, Goldstein, Zivin, Nangami, & Thirumurthy, 2009; Gager, Cooney, & Call, 1999; Hofferth & Sandberg, 2001).

Time use of Spanish children

As regards the time use of children in Spain, there are various studies that analyse the effect of parental education levels (Caparrós, 2014), parental employment and time spent with children (Gutiérrez-Domènech, 2010) on children's time use in Spain. Using Spanish data for 2009–2010, Juan García Román and Pablo Gracia studied children's time use and their parents' work schedules, finding significant differences in the way children spend their time depending on their parents' schedules at work (Garcia-Roman & Gracia, 2016).

There is also a study on the time use of Spanish children based on 2002–2003 data and implementing the capabilities approach framework to explore and measure the well-being of Spanish children and adolescents (aged 10 to 17 years). It pays special attention to gender differences in parental time use, and demonstrates the relationship between family characteristics and children's well-being, and the importance of the time parents spent with their children. The variables that the authors find have the most significant and most negative relationship with children's capabilities and well-being are parental paid working time and maternal unpaid working time. They analyse these results and highlight some policy implications regarding parental paid working time and societal investments in children. The authors underline the importance of investment in children's capabilities because of individual private gains and positive social externalities, especially in a context of low fertility rates (Gálvez-Muñoz et al., 2013). The authors further suggest that gender-stereotyped time-use allocation for boys and girls and, particularly, fathers' differentiated behaviour towards this could reproduce gender stereotypes in limiting individual capabilities. This is especially important in relation to the difference between boys and girls in educational performance.

For this analysis, we selected those individuals aged 10 to 16 years who filled in the

diaries. Sixteen is the legal working age in Spain. We chose weekdays as the dynamics with work and leisure are different at weekends, especially among children who do not have school activities those days; in future studies, we will also address the weekend period. It should be mentioned that approximately 1/3 of the respondents in this age group did not complete the diaries.

Table 16: Average number of minutes per day that children aged 10 to 16 spend on the major categories of activities

	COMMITTED TIME			AVAILABLE TIME
	PERSONAL CARE	STUDIES	HOUSEWORK	AVAILABLE
Boys	703.61	346.27	38.93	345.32
Girls	700.33	364.48	61.82	311.35
Total	701.95	355.48	50.51	328.15

Source: Own preparation from 2009–2010 STUS data.

As seen previously, girls devote nearly double the time to housework and care activities than boys, which shows that gender-related division of work begins in the early stages of life. Time devoted to personal care is quite similar in both cases, while girls dedicate more time to studying. However, the difference is not as large as in care activities. Girls thus have less available time than boys.

We now take a more detailed look at the activities that present more differences between boys and girls: study and care.

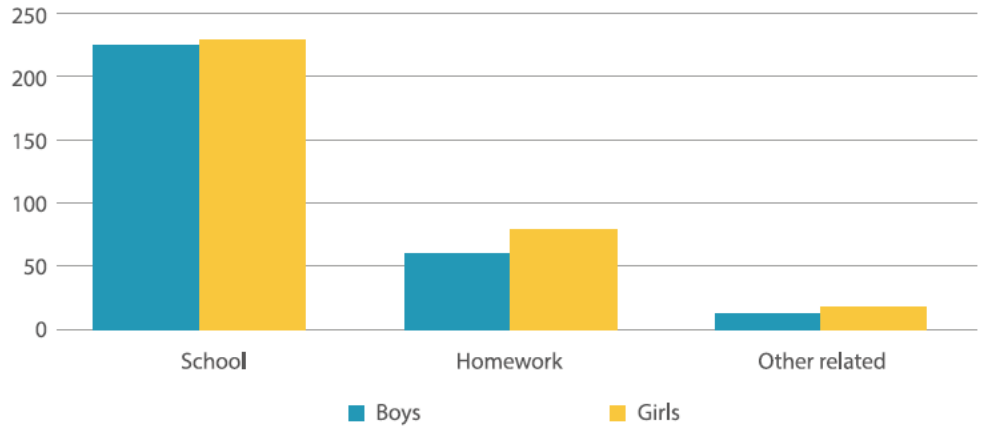
Table 17: Mean time spent on unpaid work-related activities by boys and girls

	Management	Cleaning	Clothes	Garden	Care
Boys	6.45	4.70	0.10	16.79	2.86
Girls	13.27	13.02	1.50	21.72	4.21
Total	9.90	8.91	0.81	19.28	3.54

Source: Own preparation from 2009–2010 STUS data.

As can be seen, the main differences are related to unpaid work-related activities. In all cases, girls spend more time on those activities than boys. The main differences are found, in decreasing order, in cleaning (8.32), management activities (6.82), care-related activities (4.93), clothes-related activities (1.4), garden-related activities (1.35). We find this result of prime importance: gender roles need to be broken from the early years, otherwise they are perpetuated, affecting current differences and future developments.

Figure 10: Mean time dedicated by boys and girls to study-related activities



Source: Own preparation from 2009–2010 STUS data.

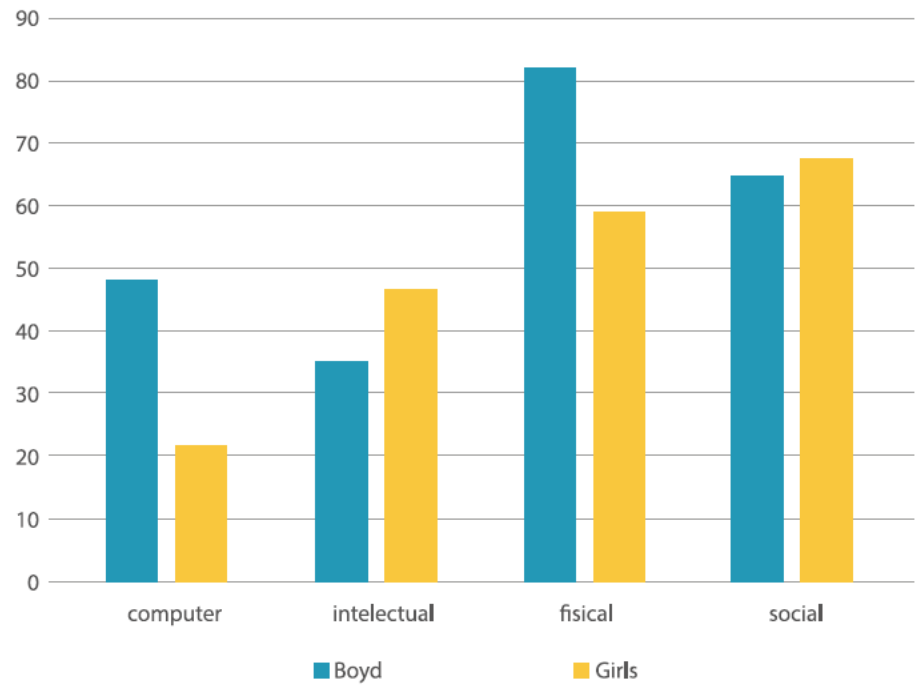
Table 18: Mean time devoted to study-related activities by children

Sex	School	Homework	Other
Boys	231.58	65.94	13.87
Girls	233.74	75.51	17.48
Total	232.67	70.78	15.69

Source: Own preparation from 2009–2010 STUS data.

If we look at study-related activities, it is interesting to find that girls have more responsibilities than boys, and spend more time doing homework and other such activities than boys.

Figure 11: Children's mean available time per day



Source: Own preparation from 2009–2010 STUS data.

Table 19: Distribution of children's main available time

Sex	Computer use	Intellectual activities	Physical activities	Social activities
Boys	48.2	35.56	83.44	64.56
Girls	22.82	47.17	59.47	68.11
Total	35.37	41.43	71.32	66.35

Source: Own preparation from 2009–2010 STUS data.

If we look at the activities performed during available time, which we have classified into four groups (see details in Appendix 2), we can see that boys devote more time to computer and physical activities and girls to intellectual activities. The time devoted to social activities is reasonably similar for boys and girls. We have no set criteria to determine the time range that should be recommended for doing each kind of activity.

We use the same methodology as with the previous age group to analyse time poverty among children. We define a relative poverty line at 60% of the available time left after personal care and all study and housework-related activities have been performed.

If we look at time poverty in children (poverty threshold = 190 min per day), we find that 19.33% of girls are time poor in comparison with 15.78% of boys. These results should be treated with caution as this is just a first approach to how boys and girls spend their time. As mentioned before, methodological caution should be exercised in understanding children's ability to complete the diary, and the way these data are collected needs to be improved.

There is another subject that should be taken into consideration in relation to children's available time. An issue under discussion throughout this work is one's autonomy over time, which is clearly limited when we are young and live under the responsibility of our parents (or family). Thus, it is important to think about how to evaluate children's available time. With the available data, we cannot draw conclusions on the time dedicated to activities such as sports or musical practice since we do not know whether these are the children's own decisions or it is the parents who 'impose' or 'suggest' those activities because they believe it is important for children to devote their time to them. This could mean that the time spent on them, rather than available time, is actually committed time. However, there are no empirical studies on this issue, and again better data collection tools are needed to include more subjective aspects that can shed more light on the way children spend their time. On the hand recent studies related to this regard such as those on the inclusion of boys and girls as active agents in the definition of their needs(Domínguez-Serrano, del Moral-Espín, & Gálvez Muñoz, 2019) ,and how they use their time, for that we need specific tools specifically designed for children

How parents' time poverty affects children's time use

We also aim at evaluating how parent's time poverty can affect the way children spend their time. To evaluate this issue, we focus mainly on families where there is a mother and a father (or another member of the family at household level) and at least one child.

Table 20: Distribution of time poverty in couples

	Available time
Only the mother is time poor	288.45
Only the father is time poor	302.67
Both are time poor	255.66
Both are not time poor	367.94

Source: Own preparation from 2009–2010 STUS data.

As shown on Table 20, the descriptive statistics show that there could be some influence of parent's time poverty on children's available time. The mean of children's available time is lower for children whose two parents are time poor and also for those whose mother is time poor.

With the results drawn from the descriptive statistics, ordinary least squares (OLS) regressions were run to evaluate how parental time poverty affects the way children spend their available time run (Vega-Rapún, Domínguez-Serrano, and Gálvez-Muñoz, 2018). Also included in the model were other variables such as family income, maximum education level, number of members in the family, age and sex. The dependent variables were available time (available time = total time – personal care – studies – housework) and time devoted to TV and computer, intellectual activities, social activities and physical activities.

We ran regressions for four different scenarios (only the mother is time poor, only the father is time poor, both parents are time poor, and neither of them is time poor) and for the different dependent variables: available time, and the different categories of activities (TV and

computer, intellectual activities, physical activities and social activities), to assess the influence of parents' time poverty.

The results indicate that children's time availability is related to mother's time poverty and there is also a high degree of significance when both or neither of the parents are time poor. Father's time poverty emerges as less significant. Time devoted to study activities is also affected, increasing when the mother is time poor or both parents are time poor. It may appear that parents with less time have children who are more engaged with study, but this could also be related to parents with higher levels of education. However further studies are needed to draw clearer conclusions.

With regard to housework, there is no significant association between parents' time limitations and children's engagement in housework activities. As for TV and computer use, there is a slight negative relationship when father, mother, or both are time poor. Intellectual activities are negatively related when the mother is time poor and when both parents are time poor, and positively related when neither parent is time poor. Physical activities are negatively related when the mother is time poor, and is highly positively related when neither parent is time poor. Social activities are positively related when both parents are time poor, and negatively related when neither is time poor, probably because in this case social activities are in fact family activities.

In summary, fathers' available time has no influence on how children spend their available time, or the time devoted to study or, in fact, any kind of time. Mothers' available time is highly related to the way children spend their available time. The fact that both parents are time poor has a high impact on the time use of children. Further studies are necessary in order to understand the main mechanisms that determine children's time use, in connection as well with their parents' employment status and educational level, with whom the activities are done with, with differences between age groups, and with subjective measures (Vega Rapun, Domínguez-Serrano, & Galvez Munoz, 2018).

4.4.6 Policy implications

We would also like to provide some insights, albeit not exhaustive, into policy implications. As the aim of this work is to study time poverty, the focus is mainly on this issue, as the policy implications of income poverty are widely known, even though much debated.

Public policies can affect the way in which individuals and families make decisions about paid and unpaid work and the trade-offs between them: the availability of different types of jobs in the economy; the rate of return to human capital; leave entitlements and benefits in and out of work; availability, quality and cost of childcare; transport infrastructure, etc. (Burchardt, 2008). Many aspects of life affect time poverty but the main policy implications are those that contribute to a better balance between paid and unpaid work, as this has emerged as the main issue when measuring time poverty.

Nevertheless, there are some key policies that may contribute to time poverty. For example, people with low educational levels have restrictions on both dimensions: an hour of paid work at the rate commanded by someone with no qualifications is unlikely to be sufficient to pay for childcare for that hour, never mind providing net time or income gains. Having higher educational qualifications can offset the employment disadvantage. Consequently, support for people to develop their educational potential, as young adults and later in life, is a crucial way in which government policies can help expand people's time–income possibilities. We could continue giving examples because many are the decisions that need to be taken.

In brief, as suggested by Burchardt (Burchardt, 2008), two main types of policies need to be addressed regarding this issue: time-related policies and income-related policies. On the one hand, there is the question of leave entitlements and the regulation of working hours (time), and, on the other, there is the provision of care services and support for those who take the main responsibility for care (income).

There are a vast range of policies which potentially affect the disposable income available to families and the amount of time they have left over after their paid and unpaid work.

According to Burchardt (2008)The kind of policies are mainly four different kind of policies:

The first type, leave entitlements and regulation of working hours, directly affect the free time available to workers, and in the case of paid leave, income too.

The second type is the provision of care services and support for caregivers, which helps to free up time for both workers and non-workers, and boosts their income through, for example, childcare subsidies

The third category is wage regulation and supplements, which help to increase the income per hour of work, especially for low paid workers.

Fourth , social security benefits are the principle source of income for those out of work, and the conditions which are attached to receiving benefits can have important effects on time budgets to by increasing the resources available to them or by helping them to meet their responsibilities.

Leave entitlements and the regulation of working hours (time-related policies) should be oriented towards providing more 'real time': paid paternal leave; right to unpaid parental leave; right to reasonable emergency leave; flexibility in working hours to allow the better management of care/household responsibilities; and the possibility of reducing working hours in some periods in order to coordinate care responsibilities. Policies favouring work–life balance, and adapting work schedules for mothers and fathers who are involved in the care of children or older adults could help mitigate people's lack of time.

The provision of care services and the support for caregivers (income-related policies) should include: the expansion of services, especially in deprived areas; subsidies to providers and families; a national minimum wage; tax credits system (time- and income-related); social security benefits for families with children and dependent adults; wage regulation and supplements to help increase income per hour of work, especially for low-paid workers; and unemployment benefits, which are the main source of income for those out of work.

For example, with regard to childcare: centres to open in more flexible schedule so that

parents who work full-time can still make use of them; schools should not assume that parents can come in for meetings and so on during working hours; more childcare facilities for children with special needs and disabled children; childcare for odd days when the school is closed (the schools should provide an alternative); more holiday play schemes, including for children with special needs; more financial help with childcare costs; a childcare credit for being at home with your children.

Pay, leave and benefits jobs that fit within school hours should not automatically be paid at the minimum wage. If it is the same job with shorter hours, it should be paid the same rate. A longer period of maternity pay, and 'baby bonus' for each baby would also be welcomed. Another implication for policy is the importance of considering parental time, alongside household income, in thinking about strategies to abolish child poverty. It would be something of an own goal if financial child poverty were abolished at the cost of children being deprived of their parents, because they were working from morning until night.

Furthermore, the same should be applied to elderly care: more active policies dedicated to the elderly that promote active aging, provide better quality of life and, at the same time, allow longer life expectancy with a better quality of life. On the other hand, similar policies related to children, providing quality care services while creating the conditions that allow the care responsibilities of the elderly that needs helps and work responsibilities.

As for employment rights and flexible working, policies could include: ensuring people know their rights; making flexible working a right, not just being able request it; reducing the get-out clauses for employers refusing flexible working requests; rights to flexible working for parents of older children, because older children need looking after too; blanket restrictions on unscheduled leave; etc.

Public policy is crucial in background the context in which individuals and families make decisions about paid and unpaid work and the trade-offs between them: the availability of different kinds of jobs in the economy, the rate of return to human capital, leave entitlements and benefits in and out of work, the availability, quality and cost of childcare, transport

infrastructure.

However taking into consideration all the above mentioned measures what is necessary In general, what is needed is a shift of paradigm so that the market is no longer the central focus. We must give a new meaning to the concepts of work and time, orienting them towards social reproduction and welfare, that is, towards the sustainability of life. A society based on the premise that the quality of life of women and men of all ages is the priority must recognise care activities as a central element (Cristina Carrasco & Recio, 2014).

5. What is missing and what should be improved in time-use data?

The structure of the last chapter of this work is as follows. In the first section, we return briefly to the theoretical background presented in the first chapter, which mainly supports the recommendations presented in this chapter. In the second section, we review our primary concerns about the two main data-collection tools: diaries and questionnaires. Subsequently, we review some new data-collection methods, which, to a certain extent, may solve some of the problems discussed in the previous section. In the last section, we analyse some of the limitations and explore some of the solutions and proposals resulting from the theoretical and empirical work carried out in this thesis, for the purpose of improving time-use survey collection and time-poverty indicators.

5.1 Brief theoretical considerations

Time-use surveys—despite having represented a turning point in the study of inequalities between women and men—continue to render 'care time' in some way invisible and to reduce the importance of the qualitative dimensions of time. This is due to the ideological conception behind this type of studies, where the market is still central and everything else revolves around it. These limitations are related to the conceptualisation of time and the way it is measured, and respond to the traditional economic theoretical model on which the surveys are based. Time-use surveys are primarily designed to capture the quantitative dimension of time, and are thus unable to interpret all aspects related to well-being.

As already mentioned, the main indicators obtained from time-use surveys refer to the amounts of time dedicated to a specific activity, basically to the work performed by women and men or to the *economic* valuation of domestic and care work. These are conceptions of time that in some way respond to the requirements of an industrial society, as explained in the

first chapter of this work.

We also have to recognise the importance of time-use surveys in quantifying the time dedicated to unpaid work, but this progress has been partial. Care work is still treated as a women's issue, and economic approaches to it continue to focus mainly on the market. All the information gathered has changed neither the economic indicators nor the economic analyses. Care work is still considered a marginal issue, which in certain situations can be 'added' to what already exists, but in no case affects the vision and the study of the global functioning of the economy (Cristina Carrasco & Mayordomo, 2005).

If the general direction in the development of time-use surveys is to include well-being as a goal, then they will have to work on the idea of multidimensional time, which goes beyond its quantitative dimension and takes into consideration a subjectivity that involves affective and emotional aspects. In other words, the 'objective' and the 'subjective' levels are inseparable, which means that we need to implement two types of time measurements: an objective measure that captures time devoted to care, in hours, and another measure that accounts for the subjective aspects involved in relation to care and the decision-making process. It is true that attempts have been made to incorporate qualitative aspects in the measurement of time, but more efforts are needed to achieve a better understanding of the subjective implications of care work, and to enhance the quantitative tools traditionally employed in time-use surveys.

The measurement of clock time—homogeneous abstract time—should include the different daily-life activities, in particular the time spent taking care of people, the time devoted to our relationships with the different people at home or with our extended family, the time dedicated to the organisation and management required for the proper functioning of the home. It should also take into consideration the way in which our decisions about how we spend our time are made. As regards the subjective aspects of well-being, the only person who can evaluate them is the person themself. Also, there is the important issue of expectations: people adapt to their life circumstances, and their expectations are therefore adjusted to those conditions. On the other hand, social comparison based on people's subjective perception not

only depends on what happens to them, but is also highly influenced by what occurs to other people, and what is consider socially acceptable.

Also, it is important to mention that the recent global pandemic, involving restrictions on movement, social distancing and the displacement of many work activities to the home, has created an upsurge of interest in changes in the distribution and sequencing of our daily activities(Gershuny et al., 2020). Time-use diary data could be recognised as one of the important sources of evidence on this topic, also because stopping the spread of infectious diseases before the creation of a vaccine requires interventions such as school closures, and physical distancing measures involve that a majority of individuals limited mobility. Carrying out such interventions demands a better understanding of social contact patterns, which are a critical factor in the transmission and control of infectious diseases such as coronavirus. In this sense, time-use data appear as an important tool to understand those patterns and analyse the type of activities performed, who they are done with and where. Thus, since the pandemic started, there has been an enormous increase in surveys (based on stylised questions) aimed at examining the changes that the lockdown is producing in our daily lives.

The objectives of time-use surveys will thus be extended to the global analysis of people's reality, that is, how they work; how they relate to each other; how they manage their time; how work is interconnected with domestic and care work; what their needs are to perform the different jobs; the level of satisfaction they get from the performance of their daily activities; how they solve their livelihood problems; what inequalities occur between women and men; and what level of well-being they experience (María Ángeles Durán Heras, 2010). They will also contribute in pandemic scenarios like the present one.

Our proposal is based on widely used instruments such as time-use diaries and questionnaires, but it is also important to mention the existence of qualitative studies and ethnographic case studies that analyse time-use data. They are not examined in this thesis work, but they are becoming increasingly relevant, and they certainly should be taken into consideration in future research.

5.2 Additional time-use data collection methods

As we already mentioned the most common data-collection methods implemented in time-use surveys are questionnaires (stylised questions) and diaries.

It is worth remembering that the essence of the time-diary method is that respondents are asked to make a complete record of their activities over a period of time. This period is usually one day, two/three days, although there are diaries that collect information over a week. It is not always the case, but time diaries may include open-ended questions about the amount of time the respondents spend on their activities, and also about their perception of time. The activities are then typically classified and coded, first into broad groups, then into more specific groups according to a set standard. Time diaries can be filled out during the day, or retrospectively. Sometimes, survey respondents are interviewed to orient their response to the survey, and then diaries are left behind with the respondent to be filled out for the next day. Questions on how much time a respondent spends on a particular activity are often used to supplement time diaries and gather information about activities that the regular diary may not capture, for example what another member of the household is doing at the same time, what feelings they have about their time use, level of satisfaction etc. (Council, 2000).

Stylised questions/questionnaires are another common method employed in developing countries to measure time use. They consist in asking respondents how much time they spend on certain activities. Some examples are: About how much time do you spend cooking at home during the week? About how much time do you spend caring for your child on a daily basis? Questions can be open-ended, so respondents can fill in a number of hours, or they can include a range of answers, such as ‘never’, ‘once a week’, ‘several times a week’, or ‘every day’, from which respondents will have to choose one. Moreover, many surveys with goals other than measuring time use employ these types of questions, usually as indicators of behavioural patterns.

We would like to mention as well some other time-use data collection methods, from which recommendations on how to improve time-use data can also be drawn.

One of these other methods is called the experiential sampling method (ESM), and was first developed by Mihalyi Csikszentmihalyi and associates (Csikszentmihalyi & Csikszentmihalyi, 1992; Csikszentmihalyi & Larson, 2014; Zuzanek, 1999). ESM studies have typically been conducted to understand the experiential, cognitive, and motivational aspects of people's activities, although they have also been used to estimate time spent on different activities.

ESM studies give survey respondents a pager, beeper, or programmable wristwatch that is randomly activated (beeped, vibrated or buzzed) throughout the day. When the respondent is beeped, they are asked to fill out a self-report of what they were doing at that moment and about various aspects regarding the activity they were carrying out. A respondent may be beeped many times within a day, and the study may cover a day, a week, or a month. The goal of these studies is to sample how people spend time, by randomly beeping them during the day and asking them to record what they are doing, who they are with, how they feel during the activity, etc.

In general, the self-reports that respondents fill out include a core set of questions (Zuzanek, 1999).What day and time were you beeped? Where were you when you were beeped? Who were you with, what were you doing, and what were your thoughts at the time of the beep? In addition, these studies typically ask questions about experiential, motivational, and cognitive aspects of the recorded activities. ESM studies allow respondents to specify the activity in which they are participating, in contrast with stylised questions (questionnaires) about time use, which prompt respondents about a particular activity (i.e., asking how much time they spent doing a named activity, instead of allowing respondents to name the activity themselves). This reporting flexibility can make classifying activities more difficult. However, it also allows data analysts to make their own classifications for different purposes.

ESM surveys do not usually intend to completely account for an individual's time use. Instead, they are typically used to explore daily behaviour processes (Zuzanek, 1999). In consequence, they have advantages and limitations when it comes to measuring time use, which will emerge depending on the purpose of the study. One advantage they have over time diaries

and stylised questions is that, given that the activities are recorded soon after the beeper signal is sent, recall error is not a concern. Responses may also be less susceptible to normative editing within the framework of the experiential sampling method, because respondents are asked to immediately record what they were doing and have less time to construct an 'acceptable' response. Furthermore, because the random beep method is a more free form, and respondents are often encouraged to express how they feel during the activity, they may also feel less pressure to record only typical or expected answers.

There are limitations to experiential sampling time-use studies. First, they are more expensive than other methods. Second, as Jiri Zuzanek described, while the response rate for beeps is generally good, the method is more arduous on the participants, and there may be a selection bias in that the people who agree to participate in the study (Zuzanek, 1999). Another constraint is that, since these surveys are not designed to account for all the time in a day, they miss certain types of activities when respondents are not disposed to carry the beeping, device with them because they do not want to interfere what they are doing. Juster and Stafford (1985) found that beeping respondents at random times recorded less activities outside of the home than time-diary, probably because respondents were less enthusiastic to carry the beeper with them when they went out. However, as more and more people carry pagers and cellular telephones, this problem could be reduced (Council, 2000).

This method could be useful for health-related research, because it makes it possible to associate emotions, feelings of pain or stress, and levels of exertion with activities. In addition, and more important in relation to this study, this method could be useful for understanding time crunch, or the stress derived from time crunch. Understanding the emotional states associated with different activities may also help classify activities by whether they give intrinsic or extrinsic rewards.

It is also agreed that experiential sampling studies could be used to cross-validate data produced from time diaries and stylised questions. A similar technique—the random-hour technique—has been used in the past to cross-validate data: time-diary respondents are called randomly on the day they are filling out their diaries to cross-validate responses for the given

hour (J. P. Robinson, 2002).

We also consider the direct observation method because, on some occasions, direct observation of an individual's daily activities could be possible. In observational studies, an 'interviewer' records what the respondent does during the day. For example, it may also be used with children (Council, 2000).

The key advantage of observational studies is that they are highly accurate. Their biggest drawbacks are that they are invasive, and are expensive. Furthermore, since agreement from participants is usually needed, they know that they are being observed, which means that they may change their behaviour. However, in some situations, observational studies can be very advantageous, because of its result and also because is a method to validate data collected through other ways (Council, 2000).

There are also some purely qualitative studies that analyse different pattern of time use. Qualitative studies on time use are best applied to specific groups, given some of the limitations of qualitative methods. These limitations are explained by the fact that qualitative research methods are often concerned with garnering an in-depth understanding of a phenomenon, focused on meaning, or centred on the how and why of a particular issue, process, situation, scene, or set of social interactions. They are extremely useful in two senses: because of their value, and because their output provides insights that can improve traditional methods, such as diaries and questionnaires. We have found some isolated purely qualitative studies or pilot studies on medical issues, therapies, households, etc. (Erkip & Mugan, 2010; Michelson, 2015; Morehead, 2001).

The process of design and development of time-use surveys is not yet closed, and some methodological debates are still going on. In this section, we will present various methodological proposals—the list is not exhaustive—derived from the analysis of the Spanish time-use surveys and from the time-poverty analysis conducted in chapter 4 of this work. But we will first analyse stylised questions and diaries to identify the advantages and disadvantages of these tools, which, as mentioned before, are the ones most commonly used to collect time-

use data.

5.3 Critical review of time-use diaries and questionnaires

In this section, we will focus on the two main data-collection methods: the diary and the questionnaire or also called the stylised questions.

There are some general issues related to time-use surveys that need to be taken into account. The first one refers to the survey modality: whether it is a module survey or an independent survey. A time-use survey can be implemented as a module within a survey with other contents, for example, an employment survey or some kind of household or quality-of-life survey. Otherwise, it can be implemented as an independent survey. The latter variety involves a higher cost, precisely because it is independent and because it usually requires a longer period of time for fieldwork. The advantage of using a module survey is that it tends to gather more social, economic and relational information, which can include interesting aspects of analysis in an integrated manner with information on the use of time and domestic work and care. One disadvantage is that it usually overloads, overwhelms and tires the person surveyed with too many questions (Aguirre & Ferrari, 2014; García Sáenz, 2005).

As mentioned before, there are two main ways of collecting information in a time-use survey. The first one, generally referred to as 'stylised estimate' (also called questionnaire), is based on responses to questions about the time devoted to various types of activity in an 'average', 'normal' or 'typical' week. If requires respondents to perform two difficult tasks: to recall the activities they performed in the recent past, and to carry out an appropriate form of averaging. Doubts about the precision of questionnaires are based on two concerns: the difficulty of the respondent's task, which might lead to substantial measurement error; and the lack of detail, which allows the respondent to choose responses that fit with a pre-existing and possibly inaccurate self-image (Juster & Stafford, 1985), which we will discuss later on. Moreover, there are also limitations related or attributed to face-to-face interviews, which some people may find intimidating (Aguirre & Ferrari, 2014).

The diary is the method mostly preferred by researchers in developed countries because of its accuracy and also because of the available data (Gershuny et al., 2019; Harms et al., 2019; Sullivan, Gershuny, Sevilla, Walthery, & Vega, 2020). As we have already explained for the Spanish survey, this method builds up a summary measure from entries in which the respondent is required to keep a very detailed record of the activities performed throughout the day, on of a set of usually randomly sampled days across the survey period. This approach is not error-free: there may be recording or recall errors involved in completing the diaries, and the days selected for diary-keeping may, by chance, be unrepresentative of normal activity. Despite this, it is usually felt that there is less scope for systematic bias in diaries, so the analysis of diary-based estimates is likely to be less susceptible to systematic distortion than is the case for stylised estimate questions. However, as mentioned before, there are surveys, such as the Spanish one and many others, which are based on diaries, and in which some questions about the way the respondents spend their time/day are also included (for example, 'How stressful was your day?' was included in the 2002–2003 Spanish survey).

Two important advantages are usually recognised for diaries. First, they reflect better the time dedicated to each activity, because they do not rely on the person's memory. Second, they allow accounting for both the main activity and the secondary activity, and, therefore, for simultaneities (Sullivan et al., 2020)—even if measuring secondary activity records may be very complicated, as we already discussed in chapter 2. One of the main disadvantages of diaries is related to the respondents' tiredness, as it takes time to fill out a complete diary. The degree of illiteracy, may also be a problem if the population analysed has difficulties to interpret or fill out a self-administered diary, which may affect the reliability of the data, especially with children and older people. This may happen not only in developing countries, but also in developed ones, because clear instructions on how to complete the diary, and clear definitions about what care activities are and how they should be reflected in the diary, are required in all cases.

As already discussed in chapter 3, most time-use surveys based on diaries include questions about individual conditions and household characteristics. However, the main

objective of this kind of surveys is to fill out the activity diary, which is reflected in data availability. In order to better capture objective and subjective aspects, we need to improve both the questionnaire and the diary, and to keep in mind that both options offer equally important information. One of the aspects that needs improvement is that most individual questionnaires in surveys using diaries (also questionnaires) do not include questions on responsibility, organisation, and restriction or constraint problems in domestic and care work, and the stressful situations that might thus be generated. Another aspect requiring improvement is that the information provided in diaries cannot be interpreted as the result of free decisions or wishes, but rather of previous social conditioning. In particular, women are affected by family and social pressure to fulfil their role as caregivers (Moen, Robison, & Dempster-McClain, 1995). A third difficulty is related to what is commonly referred to as 'simultaneities' or how to measure secondary activities, i.e., how to consider the time spent on those activities that take place simultaneously with the main activity and, in many cases, are care-related activities. They tend to be naturalised by the respondents, thus becoming mostly invisible, precisely because they are frequently compatible with other activities.

It is important to highlight that caring for a person, be they girls or boys or older adults, does not mean exactly performing a set of activities. Caring is something more complex; it implies responsibilities, organisation, and in some times continuous availability. The time spent attending, being aware, or keeping company is potentially available to perform some other activity, but care time entails a social and emotional support that requires a good dose of energy and relationship (Folbre, 2006). All this cannot be included or reflected in an activity diary, nor in a list of activities; it needs to be expressly asked in a specific question. Furthermore, it is not easy to interpret the results; in this sense, a more interdisciplinary approach should be incorporated within these studies.

A research work carried out by Cristina Carrasco (2016) compares questionnaires (stylised questions) conducted in several Latin American countries. She highlights some good examples that could be replicated in time-use surveys focused on care work. Some surveys include interesting questions, and they can offer relevant information on aspects that are

generally hidden. First, the surveys conducted in Ecuador, Panama and Peru asked the respondents whether they were in charge of organising, supervising, and directing household tasks, as well as the time they dedicated to these tasks. By raising the issue explicitly, people become more easily aware that they did this kind of work. Second, some questionnaires expressly asked whether some other activity was being performed while someone was taking care of someone else (minor, elderly, sick or with disability), and how often this happened (Colombia, Ecuador, Mexico, Panama, Peru). This helps to better capture time spent on care work. Furthermore, some questions about supervision at night (Ecuador) give an account of the care dimension of 'being aware of', which is also called 'passive care'. Third, direct questions concerning emotional support, for example 'How much time did you spend talking or advising someone in the household?', are also helpful in capturing the time dedicated to care-related activities (Colombia, Mexico, and Panama) (Cristina Carrasco, 2016). These questions included in some of the Latin American surveys are consistent with the proposal of improving the identification and measurement of time devoted to care-related activities, presented in this work.

5.3.1 What are the general limitations of diaries and questionnaires?

As already explained, in time-use diaries, respondents keep track of their daily activities using this self-report tool. Diarists record in their own words a designated list of issues: the primary activity in which they were engaged; any activities they were doing at the same time (secondary/simultaneous activities); the person who was present while they performed the activity and/or the person with whom it was conducted; the place where the activity was carried out, or—if travelling—the mode of transport. Recent surveys have also incorporated a column that determines whether respondents are using any technological device to perform their activities (tablet, mobile phone, computer, etc.).

The Harmonised European Time-Use Survey (HETUS) guidelines recommend a 'tomorrow' diary where respondents keep a continuous record of their activities in a paper-

and-pencil or electronic (computer or app) form. Respondents record their activities for two 24-hour periods: one weekday and one weekend day, both randomly selected. Based on the respondents' own words, trained coders will assign activity codes to the primary and secondary activities using the HETUS Activity Coding Lexicon (HETUS, 2013) (Finland & Sweden, 2013).

New technologies are increasingly used in social survey methodology. However, there have only been a few attempts to move beyond the traditional paper-and-pencil method that is most widely employed in time-diary surveys (Bonke & Fallesen, 2010), at least in mass surveys. There are more experiences using new technologies with smaller sample sizes or specific studies, such as those that analyse the effects of covid-19. In the last section of this chapter, we will describe some of the improvements that could be made in this regard.

The sequential recording required in diaries makes it difficult for respondents to manipulate subsequent activities (for example, substituting physical exercise for playing videogames). However, the use of diary measures of time imposes other limitations on research. There are very few panel datasets that incorporate data from time-use diaries; as a result, longitudinal analysis, which concerns the study of change over time, is generally not possible without using or taking into consideration stylised time-use variables. A second limitation originates from the limited coverage of the questionnaires used in time-diary surveys. In particular, it is usually not possible to draw a picture of the household's economic resources in the detail that it is possible with more conventional household surveys. Since the household's economic situation is likely to have a strong influence on time-use patterns within the household, this is an important limitation. There are two possible solutions to this limitation: to use detailed and more reliable time-use data at the cost of severe constraints on the type of research that can be done; or to accept poorer time-use data, with the attendant risk of measurement error (Bonke, 2005).

At the same time, diaries are arduous to complete, often resulting in response rates that are lower than those of questionnaire-based social surveys. To meet the scientific standards for sampling, it is important to reduce the (selective) non-response as much as possible. Even

though the response of paper-and-pencil time-use surveys is rather low, there is a risk that response rates will be even lower with online time-use research. Another problem with non-response is the underrepresentation of internet users among lower-educated and older people (Minnen et al., 2014). However, the impact of this should diminish as Internet access becomes increasingly common in European households (Seybert, 2011). Also, the time cost of data-administration tasks is particularly high, partly reflecting the intensive post-fieldwork data-preparation process (Chatzitheochari et al., 2018; EUROSTAT, 2008; Minnen et al., 2014).

Although stylised questions have the advantage of being the least expensive way to measure how people use their time, employing this method to estimate time spent on activities across the population is troublesome, mainly because the answers given have a high degree of error in them, i.e., respondents underreport or over report time spent in their different activities. There are several reasons that explain why stylised questions tend to lead to some errors. First, people may over report activities that are socially considered as 'good' activities. For example, Sandra Hofferth (2006) compared stylised measures of time spent reading to children with time-diary reports of time spent reading to children, and she concluded that parents exaggerate the amount of time devoted to this specific activity in stylised measures, in contrast with the amount of time reported in time diaries (Hofferth, 2006). Also Brenner (2011) also described a study in which stylised reports of church-going were much higher than time spent at church as measured by diary data. Similarly, respondents may underreport socially 'bad' activities, such as too much time spent watching television or playing videogames.

Another reason why the answers to stylised questions may be measured with error is that respondents have a difficult time recalling what they have done over the time period referenced in the question, if the question asks how much time they spent doing a specific activity over the past week. Respondents may also have difficulties in recalling and conceptualising what a 'typical' or 'average' week is like, when responding to such questions about time use over the week. For activities that take place on a daily basis, such as commuting to work, respondents are able to make a much better estimate of the average time spent on them over the week. In contrast, for activities that take place on a more variable basis, such as talking

on the phone, respondents may find it difficult to recall the amount of time spent on them (these recall issues are discussed further below). In addition, stylised measures of time use do not take into account any activities occurring simultaneously, which may be an important limitation when measuring passive activities, like watching television or any other activiity live being present. (Council, 2000).

Despite the problems with stylised questions, they can be effectively used to measure the incidence of certain activities, especially those that occur infrequently, such as how much time was spent on holidays during Easter, or how many days were spent in travelling for work. Previous research works show that some stylised questions are not measured with as much error as others (e.g., time spent at work, travelling, and shopping) (Juster & Stafford, 1985). Well-designed stylised questions cannot substitute a complete account of time spent in all activities, but they may be suitable for counting the time spent on a specific activity, especially if related to care.

Moreover, earlier studies were limited by the lack of data sources containing both questionnaire- and diary-based time-use estimates. It is particularly difficult to find comparable estimates because most surveys have collected information from stylised questions on weekly housework and paid work time, while many time-diary studies have collected only one or two days of diary records (Schulz & Grunow, 2011).

The time-diary method is generally recognised as being valid and highly reliable (Harms et al., 2019; Sullivan et al., 2020). The respondents chronologically record all their activities for specific intervals of a day. Questionnaires, in contrast, ask about how much time a person spends doing a specific activity in a specific period of time. Depending on the degree of standardisation, the information collected through this procedure can be more or less detailed. Time-use survey estimates are collected differently: respondents are asked how much time they ‘normally’ spend on a series of given activities in a certain time interval (Juster, Ono, & Stafford, 2003). The respondents have to calculate these time budgets on the spot during an interview.

One of the main advantages of time diaries is that they provide very complex information in a very flexible way. Each moment during the day is presented in sequence, treating respondents equally with respect to time and making the sequences mutually exclusive, as only one main activity is assigned to each sequence. The major drawback of this method is that not all weekdays are recorded for every respondent in most surveys, which is why a weighing procedure for calculating weeks must be implemented in order to take weekly variations into consideration. Moreover, a lower response rate is found in diaries compared to questionnaires, but there seems to be no specific pattern or deviance concerning the most usual socioeconomic characteristics (Bonke, 2005).

It is indeed very difficult to design the perfect survey, and it would nevertheless be affected by different priorities. This work makes clear the importance of care activities, and, from this perspective, diaries and questionnaires should be designed so that care activities and all their possibilities are reflected in the best possible way.

The structure of this subsection is the following. First, we look at the differences between diaries and questionnaires in unpaid work; then, in paid work. Next, we review a study carried out by María Ángeles Durán, where the diary of the 2002–2003 Spanish Time-Use Survey (STUS) conducted by the INE is compared with the time-use study based on stylised questions, and using time-use data for the same period, conducted by the CSIC and directed by María Ángeles Durán. The subsection ends with a brief final reflection on both methodologies. The proposal of this work is that both diary and questionnaire are implemented simultaneously in an improved manner in order to better capture all aspects of daily life, especially those related to care.

a) Differences in unpaid work

With regard to housework and care time, differences between diary and questionnaire estimates may be due to random and recall errors (Marini & Shelton, 1993), because the tasks summarised as domestic and care work are usually performed erratically and with varying durations. Marini and Shelton (1993) also indicate that standardised questions do not usually

enable differentiating primary and secondary activities, risking that some intervals be recorded twice or not at all, which would result in more or less time, respectively. One of the main issues to be addressed is the need to provide clear definitions for unpaid work,and housework activities.

Studies employing data from separate sources consistently report that stylised estimates of housework time exceed diary estimations. Similar results were reported by a number of studies carried out in the United States (Bianchi et al., 2000; Marini & Shelton, 1993; J. P. Robinson, 2002), Australia (Baxter & Bittman, 1995), and Finland (Niemi, 1993). Some of these studies also suggest that the difference between stylised and diary-based estimates is substantially larger in the case of women than it is for men.

In fact, some studies have found the gap between diary-based and stylised estimates to vary systematically with the respondents' characteristics (Press & Townsley, 1998). Some studies have compared diary-based and stylised time-use estimates from a single data source. Bonke (2005) compared time-diary estimates and stylised time-use data from the 2001 Danish time-use survey and found that respondents generally reported less household work time in stylised question than in diaries. They also found that the difference was significantly larger when the respondents were women, parents, or older adults (Bonke, 2005).

Kitterød and Lyngstad (2005) analysed data from the 2000–2001 Norwegian time-use survey and found minor changes between the two types of time-use instruments, with the variance significantly linked with age but not gender.

Kan and Pudney (2008) compared stylised and diary estimates of housework time from one survey, and found that the gap between estimates was associated with gender, presence of dependent children, amount of housework performed as secondary activities, and irregularity in housework hours. The study suggested that certain mechanisms, such as social desirability and irregularities in working hours, potentially produce systematic biases in time-use data. On the aggregate level of total time for housework, both diary and questionnaire estimates produced significantly different means for several subgroups. It is crucial to mention that not

only the measurement technique, but also the statistical modelling of data strongly influence the results (Kan & Pudney, 2008).

Schulz and Grunow (2011) analysed German diary- and questionnaire-based time-use data and reached several conclusions. First, they suggest that a decomposed way of measuring housework time in large-scale surveys might lead to more accurate results than asking for broader categories, which confer the task of interpreting the meaning of that concept to the respondent. Second, they argue that collecting and using multiple indicators to assess the quality of measures. Third, as precisely asking questions in surveys is all but a platitude in empirical research, they sustain that their versions might also be inspiring for other fields of measurement where normally abstract questions are used to assess certain latent dispositions, for example in research on attitudes or gender roles. Fourth, the effect of women's employment status on reported differences between questionnaire and diary advises that the respondents' individual perception of the situation, and probably their norms and attitudes at the time of the interview, might influence the estimates (Bonke, 2005; Schulz & Grunow, 2011).

Furthermore, there may be considerable intersubjective variations about which tasks the respondent spontaneously consider as housework (Baxter & Bittman, 1995; Kitterød & Lyngstad, 2005; Lee & Waite, 2005). Consequently, when using global measures of housework and care time to compare diaries and questionnaire estimates, observed discrepancies might reflect intersubjective variation in the perception of domestic and care work, rather than true instrument-related measurement effects. An important advance is that made by Lee and Waite (2005), who did not ask about housework and care time in general, but about the time spent on single tasks, and then compared the time budgets for these specific tasks, a method that allows results to be more accurate.

Exact estimation of the total time spent on housework and care is difficult because people usually have to manage household duties in several—typically short—episodes, spread across the day. However, Kitterød and Lyngstad (2005) conclude that, despite the pronounced differences between diary and questionnaire estimates, both measurement techniques provide relatively similar patterns of variation (Kitterød & Lyngstad, 2005). In any case, as mentioned

before, traditional tools using either diaries or questionnaires omit a large part of reality, and it is thus necessary to include other kind of questions within the questionnaire or the diary to capture unpaid work in a more appropriate way. As highlighted in the present work, both measures underestimate unpaid work, because it is not properly defined or considered in all its aspects.

b) Differences in paid work

The relationship between the calculated number of hours in diaries and questionnaires is a central issue also in relation to paid work. If the time spent on the labour market differs significantly at an aggregate level, and the distribution of time among the different dimensions varies, there may not be a complete substitution between the two sources, and the results of the analyses will depend on the dataset used. Less time is reported to be spent on paid work when information relies on questionnaires than when it is based on diaries. However, the difference is very modest (Bonke, 2005).

The most interesting finding is thus the discrepancy between the declared number of hours and the actual number of hours worked by working people (Bonke, 2005). This is in accordance with the findings of J. P. Robinson and Gershuny (1994), who in their methodological investigation found that short-term involvement in paid work takes a shorter time when measured by survey questions than by diary entries, and the opposite holds true for long-term involvement. The age of the respondent also influences the outcome of using diaries versus questionnaires on the issue of time spent on paid work. Hence, there is a tendency towards an underestimation of working hours, with older people being more unrealistic and younger people being more accurate about their working hours (J. P. Robinson & Gershuny, 1994).

Furthermore, data show that men report less hours spent on paid work than women if the information derives from surveys based on diaries, which matches the results obtained by Niemi (1993), who found that women significantly overstate the number of hours worked in the labour market, while no differential was found for men. A possible explanation suggested

by Bonke is that, in general terms, men have more flexible jobs and do not 'worry' so much about the number of working hours, so that their judgements become more unreliable. This is confirmed by the fact that men's accuracy in assessing their labour supply is lower than women's. Thus, it is probable that men count work periods less precisely and find work less demanding than women do, for women often have fixed working hours and more responsibilities concerning the family and, as a result, devote more time to domestic work (Bonke, 2005).

Moreover, J. P. Robinson and Gershuny (1994) argue that more paid work is recorded by utilising the questionnaire technique than with the diary technique, because informal breaks—private telephone calls, rest, socialising with colleagues, etc.—are not considered in questionnaires (Bonke, 2005), leading to paid work being overestimated.

5.3.2 Review of Spanish time-use surveys

In relation to the Spanish time-use survey, there is an important study conducted by María Ángeles Durán that compares the Spanish time-use survey (STUS) for 2002–2003, carried out by the Instituto Nacional de Estadística (INE, National Statistics Institute) following Eurostat indications, and another survey carried out during the same period and using a questionnaire to evaluate unpaid work through elements such as domestic work and caring for children and older people. This last survey was conducted by the Consejo Superior de Investigaciones Científicas (CSIC, Higher Council for Scientific Research) and directed by María Ángeles Durán.

These surveys are potentially comparable, except for the sample size, which is much larger in the case of the STUS, with more than 20,000 households, than on the CSIC study, based on 1,200 households. These two surveys differ in definition of the categories and in technical instruments for collecting information. The CSIC survey incorporated a gender perspective and a dynamic vision of the social context that allowed reconceptualising work

beyond employment, and changing the hierarchy of categories according to social criteria and not to market economy. It enabled new readings and analyses of the socioeconomic structures that contribute to modifying the social situations of gender inequality. This survey placed the emphasis on unpaid work, in an attempt to neutralise the hegemony of market economy and its effects in relation to income and benefits (María Ángeles Durán Heras, 2010).

The first feature to be highlighted in this first presentation of general results is the similarity in paid work figures. According to the STUS, the annual number of hours worked per person aged over 18 years is 1,005, while, according to the CSIC study, they are 1,071. That is less than 1% discrepancy between both sources, despite the difference in sample size, methodology, and institutions conducting the surveys (María Ángeles Durán Heras, 2010).

According to Durán, coincidence is a good argument in favour of the quality of both methodologies. However, she argued that it is easier to measure well what has already been measured other times, especially if it is an activity of such high normative content as employment (María Ángeles Durán Heras, 2010).

The differences are enormous in the category defined as ‘free time’, which occupies people almost five times more time according to the STUS than according to the CSIC. This is due to differences in the criterion of definition: the CSIC survey did not have this area as its main objective and did not include specific questions about time spent watching television or other media (2 hours per day per person aged over 10 years) or devoted to passive leisure (27 minutes), which the STUS addressed separately. In fact, this activity was addressed very different in the two surveys, and it makes no sense to compare the 4.5 hours of daily free time that emerges from the grouping of STUS activities with the scarce hour from the CSIC study, since the interviewees of the latter mainly refer to their active leisure.

The main objective of the CSIC survey was to determine the time dedicated to the so-called ‘remaining activities’, all of which had been poorly identified and hardly measured by previous empirical studies (María Ángeles Durán Heras, 2010). Any information that could facilitate the preparation of the satellite account for unpaid work in Spain, or related to health

and social policies, was of particular interest to the institution. For this reason, within its budgetary limits, the study focused on obtaining information on domestic work and care for children and elderly people (María Ángeles Durán Heras, 2010).

The activities considered are similar in both surveys, but classified differently. Household maintenance, as defined by the CSIC, is probably broader than the cleaning and ordering activities referred to in the STUS; the annual time estimate of the first survey (328 hours) is 13% higher than that of the second (289 hours).

In food-related activities, on the other hand, the definition of the CSIC study is broader than that of the STUS: it not only includes the cooking of food but also its purchase, storage, and distribution, as well as the cleaning of utensils and the place used to cook. The estimate of annual hours according to the CSIC survey is 793 hours, almost double (98% higher) than for the STUS (400 hours). Obviously, the differences are due to disparity in the criterion of definition and in the way the questions are recorded.

Domestic activities of a more physical nature (preparation of food, cleaning, shopping, maintenance of plants and animals) occupy, according to the STUS conducted by the INE, 980 hours per year, while according to the CSIC the figure is 1,351 hours, a difference of 38%. This is partly due to the fact that the CSIC survey requested information on specific activities that would otherwise not be recalled or made visible by some interviewees. The information on these activities is also displaced when it is associated with other low-intensity activities such as watching television, listening to the radio, or doing nothing, which, on the other hand, some interviewees of the CSIC survey defined as main activities and were consequently coded as leisure (María Ángeles Durán Heras, 2010).

The CSIC study did not distinguish management from home management. It assumed that procedures concerning the school, the health system, banks, tax offices, insurance companies and other organisations belonged in the same category. This could explain the 84 hours per person annually dedicated to this activity according to this study, compared with the barely 4 hours per year allocated to it, under the ‘household management’ category, by the

STUS. According to Durán, the activities of family relations or family representation, as described in the STUS questionnaire (328 hours a year), are somewhat imprecise.

Obviously, much reflection and qualitative research is needed to complement these figures. Like any other instrument of observation, surveys modify the reality they study, and their influence begins with the design of new categories (María Ángeles Durán Heras, 2010). Durán has also pointed out that the new vocabulary and the new concept offered to the interviewees are an unexpected tool to interpret themselves and their social relationships. Care is a relatively new field of research, which will grow considerably in the coming years due to its externalisation and to demographic aging (María Ángeles Durán Heras, 2010). In the STUS, which restricts care to physical attention and only allows intervals of ten minutes to be recorded, the care of children and adults is quite underestimated. Childcare in the home is estimated at 115 hours per year per person, while the CSIC survey estimates it at 355 hours, which is three times higher. Caring for children in the home is a necessary activity that requires availability. It is compatible with certain absorbing simultaneous activities developed also at home, such as watching television or some forms of social life. However, even legally, young children cannot be left alone in the home, and we are to provide social measures to support the family or workers with children, and bear in mind their time of availability and not just active care. Childcare is more visible in the CSIC survey than in the STUS (María Ángeles Durán Heras, 2010).

In care for the elderly, the methodological differences pointed out with respect to children become more acute. According to Durán, both sources underestimate care time, which is invisible within other categories. In the STUS, when referring to children it is called ‘care’, but, when referring to non-children, it is semantically transformed and categorised as ‘helping adult members of the household’. This way, the separation between the attention given to adults who can take care of themselves and to those who need ‘help’ is marked, without their being described as sick or dependent (María Ángeles Durán Heras, 2010).

There seems to be agreement among researchers that diary data on time use is more reliable than questionnaire-based data. Attitudes and norms are assumed to influence the

information provided by respondents in questionnaires, whereas the consecutive structure of a proper diary may somehow avoid this kind of measurement error, though not completely. Unfortunately, the diary method is much more expensive than questionnaires and other methods. However, as mentioned before, the conclusion of this section is that we need both questionnaires (stylised questions) and diaries in order to get a clear picture of how women and men distribute their time and make decisions about it, because there is information that can only be gathered and understood by using questionnaires, as we have seen in the review of the two Spanish surveys and analysing previous studies.

Moreover, because both methods may not be perfect substitutes, there are important theoretical and methodological issues that can only be addressed appropriately by one or the other. The proposal of this thesis is that these two instruments are used in a complementary way. The best way to collect data would be to use a better designed diary, and a better designed questionnaire, which together would be able to capture more precisely the factors that determine the different uses of time and the importance of care activities. This is especially relevant if we recognise there are perceptions of time that are measured differently.

In the next section, we study new methods that are addressing or trying to overcome some of the limitations presented in this section, especially in relation to diaries, which are the method used in the Spanish time-use surveys revised in this work.

5.4 New time-use data-collection methods

The aim of this section is to illustrate how new projects are developing new ways of collecting data, but it does not intend to be an exhaustive review of all the current diary-based attempts and pilot studies. It is important to highlight that these methods aim at solving the problems presented in the previous section. However, they have not been extensively implemented and most of them are only pilot studies.

The weaknesses presented in the previous section concerning the lack of response and the tedious work required to process the surveys could theoretically be solved by using new

technologies for time-diary data collection, which could produce more user-friendly and less complicated instruments, and significantly reduce data-cleaning and coding costs. However, the vast majority of social surveys continue to rely on the traditional paper-and-pencil self-completed time-diary instrument (Chatzitheochari et al., 2018; Vikat & Boko, 2013).

Only a few studies have used online diaries to collect time-use data, employing question-based approaches that resemble computer-assisted personal interviewing (CAPI) instruments (Bonke & Fallesen, 2010; Minnen et al., 2014). More recently, there have been attempts at collecting time-diary data via smartphones (Fernee & Sonck, 2014; Hendriks, Ludwigs, & Veenhoven, 2016; Vrotsou, Bergqvist, Cooper, & Ellegård, 2014) and other app specially related to the studies on analysing the effects on covid-19 (Farré, Fawaz, González, & Graves, 2020; Sullivan et al., 2020). These instruments also adopt question-based approaches in order to enrich data collection. We now focus on three of them: the Millennium Cohort Study, the Modular Online Time-Use Survey (MOTUS), Capture24 and Caddy more recently implemented for COVID19 study.

The main objective of this section is to show the direction and changes time-use surveys are experiencing.

5.4.1 United Kingdom Millennium Cohort Study

We now analyse two novel modes of diary-data collection that were employed in parallel by a large-scale multidisciplinary cohort study in order to obtain information on the time allocation of adolescents in the United Kingdom. This is the first large-scale study using an innovative mixed-mode approach to collect diary data. A web-based diary and a smartphone app were created and provided to cohort members, and only those who were unable or refused to use the web/app modes were offered a paper diary (Chatzitheochari et al., 2018).

5.4.1.1 Web diary

The web diary is similar to the paper diary, and entails in activity and contextual codes down the side, and 10-minute slots. Analogous to the paper diary, respondents are required to draw a line using their mouse in order to record their activities. Clicking on these allows respondents to expand and view activity codes. Contextual elements appear also together with the activity code.

Another characteristic that prevents confusion in the web diary is a digital clock that shows the time of the cell the dragging bar is in. One of thereat advantages of the web diary allows the implementation of a robust range of soft checks and hard restrictions in order to produce more detailed diary accounts. Soft checks caution respondents if they enter information may be incorrect. These forewarnings can be overridden and respondents can continue completing the diary. In contrast, hard checks do not allow diarists to resume completion until the 'incorrect' entry has been rectified (Chatzitheochari et al., 2018)

The web diary also provides a visualisation of the accomplishment levels for the main activity and the contextual information: when the respondent attempts to submit the diary, a charts act summing up completion levels and prompting the respondent to return and complete any breaks (Chatzitheochari et al., 2018).

5.4.1.2 Smartphone app

As discussed earlier, the app tool required a different design approach, due to the small size of smartphone screens. Rather than a time-grid format, the app diary follows a question-based approach, in line with existing app-based time-use instruments (Chatzitheochari et al., 2018; Hendriks et al., 2016; Vrotsou et al., 2014).

Respondents first select the top-level code under which their activity falls, then the activity itself, followed by the time it ended, the place where they were at that moment, whom they were with (if anyone), and how much they liked doing it, in a linear format. Instead of using 10-minute slots, the app allows cohort members to assign the end times of their activities..

Due to the assembly of the tool, contextual elements are adjacent to the main activity, and app diarists are not able to specify variations in any of the characteristics of their recorded activities as in the paper and the web tools (Chatzitheochari et al., 2018).

The main check is generated when an activity other than sleeping or school is reported to last more than 3 hours. Also, a hard check advises respondents who try to submit the diary with no data, while a soft check is generated when submission of a time period of less than 24 h is tried (Chatzitheochari et al., 2018).

This web-administered diary and this smartphone app were designed to enable the United Kingdom Millennium Cohort Study to gather information on the time allocation and activity patterns of adolescents in contemporary Britain. The analysis of the pilot study shows that the use of prompts and soft checks in the new instruments could improve data quality, measured by the mean number of episodes and completion of diary dimensions. (Chatzitheochari et al., 2018).

5.4.2 Modular Online Time-Use Survey (MOTUS)

MOTUS (Modular Online Time-Use Survey) was developed as an alternative to paper-and-pencil time-use research, not only to tackle high costs, but to provide additional outputs. First, we will describe the positive and negative aspects of MOTUS compared to classical paper-and-pencil time-use research conducted in accordance with the Eurostat HETUS (Harmonised European Time-Use Surveys) guidelines. Then, we will highlight the 'modular' characteristics of MOTUS and some other advantages, the main one of which is the possibility of designing separate research modules focused on particular research questions (Minnen et al., 2014).

One of the major challenges that MOTUS deals with is the absence of a face-to-face interviewer who could provide the necessary information to successfully complete the diary. An alternative to the essence of face-to-face interviews is developed. Thus, an introductory video is provided on the website homepage to frame the societal relevance of time-use research

and make known to the research group. Since motivating the respondent to actually participate in the research is another important role of interviewers, the introduction letter, as well as the introduction video, emphasise that respondents who effectively complete the time-use survey will receive an overview of their time use and a comparison with that of the Flemish population based on the averages of all participants. They also use prize money as an incentive. In addition, the instruction pages and videos on the website compensate for the absence of the interviewer's role of providing information. As the authors point out, a significant advantage of this method is that it allows postponing the provision of important information until a specific moment in the research (Minnen et al., 2014).

Other advantages of MOTUS, according to the authors, are: 1) the possibility of changing the questions asked concerning each activity depending on the activity that is chosen, and 2) the modular design of MOTUS, which enables defining separate research modules focused on a particular research question. In the pilot study, two such modules were developed: a transport module and a media module. MOTUS, like a web diary, makes it possible to give warnings during the diary-recording process, based on consistency checks running in the background, ranging from very simple checks to more sophisticated controls (Minnen et al., 2014).

5.4.3 Capture24

Capture 24 is a study carried out by the Centre for Time-Use Research (CTUR) at the University of Oxford. The project tests self-report time-use diaries against objective instruments in real time. It is led by Jonathan Gershuny, Teresa Harms, Aiden Doherty, Emma Thomas, Karen Milton, Paul Kelly, and Charlie Foster and supported by the University of Oxford (Gershuny et al., 2017). This study provides a new test of time-use diary methodology, comparing diaries with a pair of objective criterion measures: wearable cameras and accelerometers (Gershuny et al., 2017).

A volunteer sample of respondents completed traditional self-report paper time-use

diaries. On that specific day, respondents wore a camera, which constantly recorded images of their activities, and an accelerometer, which continuously recorded their physical activity (PA) throughout the 24-hour period (Gershuny et al., 2017).

The comparison of diary data with camera and accelerometer records strongly supports using diary methodology at both the aggregate and individual levels, and provides evidence that time-use data may be a preferable alternative to physical activity questionnaires (PAQs) for obtaining population-level estimates of physical activity energy expenditure. It suggests new opportunities for calibrating the metabolic equivalent of time attributions to activities, using large scale time-use diary studies deployed for samples that are representative of national populations (Gershuny et al., 2017).

The main objective of this section was to briefly present the new instruments that are currently being implemented to improve diary methods, which are the most common ones in developed countries and western societies.

5.4.4 CaDDI method

The click-and-drag approach is a direct development of the light diary format (approach is that it records time spent only for a pre-selected list of activities, the number of which can vary but not exceed 30 in view of practicality), but designed for online use. The 'light' diaries are designed to lower both respondent and coder burden and include a restricted menu of activities. The approach was developed by the CTUR and implemented. Respondents use a click-and-drag tool (the Click-and-Drag Diary Instrument, CaDDI), initially dragging a pointer across a horizontal timeline bar to create a record of the length of time they spent doing each main activity. Activities are identified using drop-down menus and are revealed on the timeline bar in different colours. The screen is filled in the same way with successive rows of information showing. This alternative to the modular model is intuitive to complete, and may be less costly in terms of repetitiveness for respondents, avoiding the burden of having to enter each main activity timelog, followed by reiterated lists of drop-down menus to complete the

residual diary fields for each main activity. In this sense the click-and-drag approach is more similar to a light paper-based diary, and also facilitates a data structure familiar from the analysis of sequential life-course data—in which a change in any one of the fields identifies a new ‘episode’ , allowing more tractability in analysis (Sullivan et al., 2020).

5.5 Proposal derived from the analysis

The objective of this section is to reflect on the limitations encountered during the development of this thesis. Without being exhaustive, the aim is to provide some methodological proposals on how to improve time-use surveys.

As mentioned before, the Spanish time-use survey (STUS) has substantial limitations from a gender perspective. The list of activities itself was drawn up with an androcentric view of the activities that needs to be corrected. The activities are defined on the basis of the centrality of work done in the labour market, which is the only type of work traditionally considered, while domestic work is included in the ‘home and family’ category. An important issue that has already been discussed is the underestimation of ‘care’, as well as the absence of questions in time-use surveys referring to the organisation and planning of unpaid work (Gálvez Muñoz, Rodríguez Modroño, & Agenjo Calderón, 2012). As we know, there is a more objective time, which can be measured and quantified, and regulates people’s activities; it is the time that takes the form of money. And there is a more subjective time, barely measurable, which does not materialise into any concrete activity, but is devoted to invisible tasks related to psychological attention, emotional support, and care, which are essential for well-being.

5.5.1 Limitations and proposals for time-use data collection

We must take into account the totality of people’s activities and social reality, considering all the experiences that give meaning to life: the different kinds of work, the time spent on care, leisure, social participation, volunteer activities, etc. These elements cannot be

analysed separately. Not only do they require a certain number of hours, but also a certain distribution of time, taking into account that the people involved in them need to coordinate themselves and their time. In this sense, it is worth noting that having freedom to organise and manage one's own time is an important source of well-being.

It is also necessary to establish priorities, because, if the main objective is the well-being of the population, the time dedicated to domestic and care work meant to meet people's basic needs should be considered essential and must be correctly recorded in time-use diaries. Our proposal for the improvement of data can be summarised in two main types of recommendations, which will be described in the following subsections: the first one contains general recommendations about time-use surveys; the second one focuses on more specific recommendations about diaries and questionnaires, using the STUS as an example to specify the improvement.

In general terms the proposal aims at offering a better description of how diaries ought to be filled out, defining primary and secondary activities, as well as care work, supervisory work, and support work, and giving better instructions and better examples.

5.5.1.1 General recommendations

In order to present the information in an orderly manner, we will follow a problem/recommendation structure. Again, we would like to underline that the list derived from the analysis and the problems encountered during research of this thesis.

1. **Problem: Reference period**

There is a discrepancy between the reference period of the data—one or two days—and the time period that is typically of interest to the researcher. This feature of time-diary data has important implications for their analysis. To date, many studies analysing time-diary data have failed to recognise the importance of the reference period. The Harmonised European Time-Use Survey (HETUS) guidelines (Eurostat, 2009) recommend collecting data on multiple days. Using only one diary day is also acceptable, but it makes it impossible to obtain any idea of intrapersonal variation (Frazis & Stewart, 2012) Nevertheless, considering the design of most

multiple-day time-use surveys, little can be learnt from them about intrapersonal variability. The estimation of parameters describing intrapersonal variation in time use from data collected for two days is only possible if time use can reasonably be expected to be uncorrelated between the days sampled (Frazis & Stewart, 2012)**.** For most existing surveys following Eurostat recommendations, the sample is two days, and independence is unlikely for two reasons. First, the days sampled are typically close to each other in time, which may result in either positive or negative covariance depending on the activity. For example, busy periods at work that require longer hours may extend over numerous days and cause positive co-variances for labour work. On the other hand, household tasks may only be periodically necessary, so if observed on one day they would be unlikely to be observed on surrounding days, with the consequent negative covariance. The second reason is that some surveys intentionally sample two different days of the week, usually one weekday and one weekend day. With this type of sampling, even for days separated from each other, time use may be correlated if persons have regular weekly schedules that vary across the population. However, the short reference period combined with the large amount of day-to-day variation in time use implies that any given time diary is a poor indicator of the individual's long-term time use (Frazis & Stewart, 2012).

1. Recommendation: Reference period

The main recommendation is to collect data for as many days as possible. We are of course aware of the financial limitations of conducting a week-diary survey during two or three periods throughout the year. Therefore, the main proposal supports that data are collected for at least two days, but the selection of days must be more carefully designed in the sense of choosing a 'normal' and an 'exceptional' day, which need not be related to weekend days or weekdays. The categorisation days may be selected by the person who will fill out the diary. The possibility of collecting a third day could also be assessed if the person completing the diary considers that, because of the variation between days, this could provide some extra information considered to be relevant.

It should also be considered that covering a larger number of days might provide a better picture of the 'average' day for a particular person. However, this could also induce

respondent fatigue. And, as mentioned before, there are financial limitations to it. We thus believe that collecting data on a 'normal' day and an additional day with a different time pattern is also a possibility.

2. Problem: Number of respondents in the household

Time-use researchers have recommended that surveys collect time diaries from every person in the household and for multiple days. Collecting time diaries from every person in the household would allow researchers to understand in a better way about the intrahousehold allocation of unpaid work and leisure (Frazis & Stewart, 2012). However, studies have shown that users of single-day data from multiple household members face the problem of disentangling the day-to-day covariance. Collecting multiple diaries from respondents can be theoretically valuable, but only if the days are sampled to ensure that the activities on those days are independent. (Frazis & Stewart, 2012).

2. Recommendation: Number of respondents in the household

When a survey includes everyone in the household (or everyone above a certain age), it is possible to analyse the interactions between the activities of different household members. This kind of analysis has been typically carried out to study the activity patterns of husbands and wives, but could be extended beyond this, for example, to the activity patterns of children, mothers and fathers. It would also be of critical importance to include questions that allow us to better understand household dynamics, such as: How do you consider the contribution of your husband/wife to housework activities? Are care activities at the household level a critical issue of discussion?

We also recommend finding more studies that analyse and compare diaries filled out by couples in order to validate and evaluate the information given by each respondent.

3. Problem: Second individual questionnaire in diary-based surveys

Another major limitation is that questionnaire-type questions in the diary appear to be less important because the main method selected is the activity diary. More importance should be given to the design of questions included in the diary. We find this limitation to be critical

as there is crucial information—particularly, care activities—that is essential for a better understanding of time-use dynamics and needs to be recorded this way.

3. Recommendation: Second individual questionnaire in diary-based surveys

In this sense, we consider important to properly explain to interviewers and interviewees that both instruments are relevant: the diary and the individual and household questionnaire tools. It could be an option to give the questionnaire first and then the diary, on different days.

4. Problem: The concept of unpaid work

As already mentioned, one of the main questions addressed in this work is the meaning and conceptualisation of care work, which traditional surveys relate only to the care of people. A difficulty with respect to care is that it is usually understood as a narrow concept, while in fact care includes many other activities. On the one hand, it can be further specified as care of children, older adults, people with disabilities or health problems, and also, more generally, of the community. On the other, it comprises planning activities, sharing emotions, being present, being attentive, etc., all of which should be included when we measure time.

It is also important to consider the hierarchy that is assigned to care in time-use surveys. According to the hierarchy established in the Eurostat guidelines, personal care activities stand first, followed by paid work, household activities, and, finally, leisure.

Finally, it is worth underlining that, as discussed before, diary respondents—especially women—tend to underestimate time dedicated to care activities.

4. Recommendation: The concept of unpaid work

Although we are aware that the frontiers of care are not very clear, we believe that more effort should be made to conceptualise this set of activities.

Diaries should include activities such as supervising others, planning and organising, being responsible, attentive or present, as well as other activities, such as travelling, in connection with care.

At the same time, more effort should be made as well in relation to the classification of unpaid work carried out in other households. This is a relevant aspect of care activities that must be taken into consideration.

The importance, in terms of care activities, of filling in the secondary-activity column in the diary should also be underlined. There is a high non-response rate affecting this column that probably hides many unpaid working hours as primary but also as secondary activity.

With regard to questionnaires, better-designed questions are required and an increase in the number of qualitative questions about care is also necessary in order to properly capture care activities. Some examples are given in the next section.

Clear instructions should be given to the interviewers about what care work is and about the activities that should be reflected on the diary. One of the main problems encountered is that individuals are often not aware of the meaning of care and the importance of this work.

In addition, studies on care should include information on the people the respondent may be with while performing the different activities, because it could uncover possible hidden care activities. For example, watching television with a child aged one year undoubtedly involves carrying out care activities at the same time as the respondent performs the main one.

Finally, a reclassification of unpaid work (also in the Eurostat guidelines) is needed, for care work cannot be considered together with voluntary work. Unpaid work, in the form of care and household work, is essential and needs to be considered as such.

5. Problem: Autonomy

An important fact we would like to measure is the individual's autonomy and capacity to decide how they use their time. We find this to be crucial information to evaluate the way decisions about time are made.

5. Recommendation: Autonomy

It would be interesting to add a column in every slot to reflect the autonomy the individual had on making their decision about the use of time.

The methodological recommendation would be to add this column with the following categories: own decision, family decision, obligation, paid work responsibility, unpaid work responsibility. In its absence of this a question is the individual questionnaire will be desirable

6. Problem: Subjective well-being

This problem is related to the previous issue of autonomy. Surveys should draw up a list of activities and then ask respondents to rate how pleasant or unpleasant the activities carried out during the day were for them. This would also help evaluate better the time use of men and women, especially in relation to care activities, some of which may be very pleasant while others are not, or may be enjoyable during the first few hours, but not so much later on. This crucial information should be collected.

6. Recommendation: Subjective well-being

Here are some of the examples used in previous surveys. The British survey asked the following question: 'How much did you enjoy doing this activity?' on a scale of 1 to 5 (1 = I enjoyed it very much, 5 = I did not enjoy it at all) (Fisher, Gershuny, & Gauthier, 2012). In Statistics Canada 2005 telephone time-use survey, respondents were asked at the end of the interview: 'What did you enjoy most about the activities you just listed?'. The respondents then chose one of the day's activities that they felt was the most enjoyable. Statistics Finland 2009–2010 time-use survey diary asked: 'When you think about the activities you have entered in your diary, which of them do you enjoy most?', and 'At what time did you do this activity?'. According to the respondent's own words, the responses were then classified into primary and secondary activities. There is also evidence from the latest United Kingdom time-use survey, where having this column increased the respond rate because people felt more involved/encouraged into the survey. This recommendation will help increase the respond rate, which is one of the main challenges when conducting time-use surveys.

7. Problem: The concept of activity

What is an activity? Time is the basic dimension, and we can speak of activities only insofar as we can locate points in time that constitute ends or beginnings of these behaviour

units. Activities are rather complex entities (Ås, 1978). They can be further specified and broken up into smaller and more basic elements. We also encounter problems if we try to combine too many elements into 'one' activity. Furthermore, the 'sequence' of daily activities of an individual is not always orderly and simple. Interruptions will occur and activities can literally take place in the middle of other activities. Instead of following each other, activities often overlap each other. This is especially so if we are working with very detailed records. For example, how do we consider having dinner while talking to the children about homework? As dinner or as a conversation with children?

7. Recommendation: The concept of activity

First of all, better instructions should be given before the diary is filled out. Second, the importance and value of short episodes of time, which may be related to care, need to be highlighted. Third, more precise criteria on how to differentiate activities should be explored. For example, it could be useful to pose a question that would help respondents evaluate which is the main activity and which one the secondary. For instance, in the previous example about discussing homework while having dinner, the question could be: Am I indispensable for this activity? Or, which of the two activities do I consider more important? Clarification and harmonisation are, in this sense, required to establish better criteria and to facilitate filling out the diary and making comparisons.

8. Problem: Contextual variables

Other common areas of discussion in relation to time-use surveys are location and other contextual variables. However, not all diary-based surveys include questions on location, the presence of others (children under 10 years, children over 10 years, other members of the family, friends, unknown people/strangers), means of transport, and use of new technologies.

One could argue that the 'with whom' variable would be a way of identifying unrecorded care for children or even adults. It is likely, however, that a woman who neglects to record that she was caring for a child over a certain period will also neglect to note that the child was with her while doing other activities. In this sense, instructions about these issues are

very important.

8. Recommendation: Contextual variables

The provision of all this information should be mandatory, and clearer instructions are needed to reinforce the recording of contextual variables.

Clear information on these issues would be useful to obtain a more accurate picture of care activities, especially as regards the variable 'with whom', which may allow capturing hidden care, especially passive care (related to being present, being attentive, etc).

The above presented methods could help with soft checks. Using the same example as before: when someone is watching television with a one-year-old child, they could be prompted with the question 'Are you taking care of the baby?'. Many checks could be implemented using new technology tools.

9. Problem: Representativeness at the regional level

It is important that surveys achieve representativeness at the regional level. There are significant regional differences in time use and time poverty that ought to be reflected. In the case of Spain, the 2009–2010 time-use survey did not provide detailed information at the regional level.

Variables at urban and rural level should also be considered, depending on the country/region analysed and the object of study.

9. Recommendation: Representativeness at the regional level

It is important to select an appropriate survey sample that allows for representativeness at the regional level, and at the urban and rural levels, especially in countries with notable regional differences. It may be recommendable, due to the high cost of surveys, to establish alliances, for example with the regional institute of statistics, to jointly fund the study, as it often happens in Andalusia.

Given the substantive regional differences in Spain, the future STUS should achieve this kind of representativeness in order to show a more accurate picture of the diverse realities

of time use in the different areas or regions.

10. Problem: Periodicity of the survey

Time-use diaries are considered a very expensive way of collecting data. Eurostat's recommendation is to conduct a time-use survey every 5 years. However, as we have already mentioned, the last STUS was administered in 2009–2010, already ten years ago.

10. Recommendation: Periodicity of the survey

From our point of view, time-use surveys must be a priority, because they provide invaluable information about the well-being of men and, especially, women in different areas. As already mentioned, time-use surveys make visible the unpaid work that remained hidden until the development of this tool.

Another possibility—due to lack of resources—could be to introduce a module on time use in most surveys conducted by the Spanish National Statistics Institute (INE) at national and regional levels, such as health surveys and labour surveys.

The implementation of time-use surveys is essentially a political issue. A society that aims at eradicating all discrimination and implementing policies to avoid it must include the conduction of periodical time-use surveys in its agenda.

11. Problem: Age groups

In general terms, surveys should be implemented differently for each age group. As shown in chapter 3, there are different issues that emerge at different life stages.

Diaries are mainly designed for persons who work in the labour market, but these people have different characteristics and, in general terms, face different problems than younger and older people. We believe that specific diary and questionnaire instruments should be administered to each of these groups.

11. Recommendation: Age groups

We suggest that diaries should be designed differently for older adults and children. For

them, time intervals should be longer because the variability of their activities is smaller and it is probably unnecessary to fill out diary entries every ten minutes. Special assistance to complete the diary is arguably required for children and, in some cases, for older adults.

In this sense, the new technologies play a key role, facilitating diary filling for these specific groups. This could be also considered for people with some kind of disability.

In addition, we believe that more importance should be given to the questionnaire, even more so when dealing with older adults and children. Here we provide some examples of questions that might be helpful.

For older adults:

- Do you have too much time available?
- Do you feel stressed?
- Would you like to do more activities? Or to spend your time doing different things?
- Are you taking responsibility for the care of grandchildren? Are these activities very tiring?
- Are these responsibilities divided equally?
- What would you like to do with your spare time?
- Do you feel lonely?
- Do you sleep well?
- Is there any difference between weekdays and weekend?
- Do you find daily life activities burdensome?

For children, qualitative questions should be different, obviously related to homework, playgrounds, time to socialise, etc.

- Do you think that you spend too much time in school?
- Do you have too much homework?
- Do you have many extra activities after school?
- Do you have free access to television and internet?

- Would you like to sleep longer on schooldays?
- Do you get bored during the weekends?
- Do you have any responsibilities?
- Do you have any housework activities? Are they equally shared with your siblings?

5.5.1.2 Specific recommendations for diaries and questionnaires

In this section, we make specific recommendations to improve the individual and household questionnaires and the diary instruments of the STUS (the original documentation can be found in the Appendix 1).

We are aware of the financial limitations of the INE, and the recommendations presented herein aim at being consistent, doable and taken into practice, for this is a proposal based on the improvement of tools already designed and used.

In general terms, it is desirable that time-use surveys allow matching information with household surveys, employment surveys and the majority of surveys available at the national level in order to enrich the analysis, and take the maximum advantages of the surveys conducted by the National Statistics Institute.

a) The individual questionnaire

In relation to the general characteristics of the individual questionnaire, we observe that the question on civil status (married, single, widow, separated, divorced) should include more categories, such as cohabiting partner. It would also be interesting to study the uses of time in same-sex couples, for whom there was practically no data in the entire sample of the latest STUS.

The questions about work are also important and should be redefined, as the categories are very narrow and the concept of work itself refers only to activities performed in the labour market. There are no specific care-related activities considered as work. In order to fully

understand the concept of work, these categories must include all types of work.

One of the main problematic issues has to do with the income variable. It is important to have this information at individual level, but this is hindered by the fact that income data are recorded in intervals, and to obtain a correct value we need to make certain assumptions. It would also be important to gather information on financial capital, assets, etc., in order to design a proper income-poverty measure. We also find difficulties in matching the income variable of the individual questionnaire with that of the household questionnaire. Some information was inconsistent, for example, when individual incomes were higher than household incomes. Thus, a more efficient way of recording the income variable is necessary.

With regard to the question about help in other homes, it should also be asked whether the respondent provides this help as a duty or by free decision.

It is also important to include questions about sports, leisure and cultural activities.

As for the question on health status, it is oversimple. The way it is formulated (with very good, good, acceptable, bad, and very bad as possible answers) does not provide the level of detail required.

In the 'use of time' section, the question on how often the respondent feels overwhelmed by tasks (very frequently, sometimes, almost never) is too simple. It should include questions such as: Do you have the feeling that there are not enough hours in a day? Do you not have time to do all the activities? What activity would you like to spend most time on? Do you feel that if your partner participated more in household chores, you would be more relaxed? On the other hand, it is not easy to compare the answers gathered from this section with the time-poverty indicator, as the period of reference may be different.

One of the main limitations of the individual questionnaire is that it includes no questions on subjective aspects regarding the respondent's use and management of time as well as sense of autonomy in doing each activity. For this reason, it is also important to include a question on how the respondent considers the balance between household and care activities at household level, and whether they are happy with it, or at least agree on the division and make

their own decisions on their own time.

Questions are also needed to address the objective measurement and quantification of time, and to give visibility to tasks other than direct care that are normally hidden and not reflected in the diary. These are questions about who organises family life, who is attentive to the needs or requirements of the household, who manages and/or performs each task.

In addition, there is need for questions aimed at capturing possible emotional support for other people (particularly adolescents): personal conversations, providing company not necessarily for reasons of dependency, activities carried out in conjunction with a child not because of the need for the activity, etc. An example could be:

- Do you feel overwhelmed by emotionally supporting a member of the family?

In this line, there is also need for questions that capture situations that have to do with 'being attentive' to the needs of other people in the household, at night, from the workplace, from home, situations that often generate a significant degree of tension. For instance:

- Do you feel you are responsible for all the members of the family?
- Do you feel that, if you do not have control at the household level, the activities required at home will not be carried out?

As for questions aimed at capturing subjective aspects of care, posed on the people who perform the care work, it would be interesting to know the type of relationship they have with the person they are taking care of (whether it is kind, tense, exhausting, voluntary, or required), and how they organise the work. For instance:

- Do you feel tired of the activities carried out at household level?
- Do you feel tense or exhausted in relation to all the activities carried out?

Other questions, related to paid and unpaid work, should also be considered, including a question on the opportunity cost of having so much responsibility and other, such as for instance:

- Do you have the impression that your job opportunities have been affected by your household and care responsibilities?
- Could you have a job with different conditions in the labour market?
- How do you find your work-life balance?

In relation to the various tasks required for the proper development of home life, and to who assigns responsibilities for the members of the household to carry out those daily activities, combining schedules, spaces and relationships, it would be interesting to ask:

- Would you like to work less and have more time?

As well as at measuring the stress level, questions should be directed at the difficulties of combining and making different activities compatible, particularly those that seem extraordinary when the schedules are so tight, but are in fact part of daily life.

- Which activities generate stress and feel that they consume more time?
- Which are the most tiring activities?
- Are the activities that consume more time those that generate more stress?
- Are you able to switch off from home at work and from work at home?
- Do you have any help? Do you consider that help is fundamental?
- Do you consider yourself time-poor?
- Do you do many activities at the same time?

b) The household questionnaire

We have two main recommendations concerning the household questionnaire: 1) it would be important to find out who the reference person is; and 2) it would also be interesting to add some extra questions on how the decisions are made at the household level.

It is important to define who is taking on the responsibility at the household level and who is the reference person filling out the household questionnaire. In principle, we believe that the person to answer should be the one that spends more time in the household, or the one who makes more decisions at household level. This need not be the person who financially

contributes the most to the household. If we take into consideration the person that does more work at household level, then, in most cases, the reference person will be a woman, when in most surveys the person designated as reference person is a man.

Furthermore, we find it would be interesting to add questions to the household questionnaire in terms of how the work is divided at household level:

- Who makes the decisions at household level?
- How are the resources divided at household level?
- Do you think household activities are equally divided? If not, why? And how are they divided?
- Do you think you spend (a lot of time, much time, little time) carrying out those activities?
- How are the main decisions made in the house?
- Who controls the main resources?
- What changes would you like to make in how things are managed in the house?

c) The diary

Despite the diary being a solid instrument, its instructions and the definitions and conceptualisation of the activities recorded need to be improved, because as we mentioned before care activities are underrepresented as primary and also as secondary activity.

First, it is of crucial importance to expand the list of activities, specifying care and supervision activities in greater detail. Attention must be paid to the supervision of children and seniors, and dependents should be included. Every national statistics institute or office has the capacity to develop four-digit codes for the activities they deem important. In this sense, care activities should be further specified for a better understanding and correct completion of the diary.

As mentioned before, all the activities should include a 'with whom' column, specifying whether there are children aged under and over 10 years, older adults, partners, etc. present while the respondent performs the activity in question. The respondent's levels of

satisfaction and autonomy should also be determined, as well as whether technology is being used.

We also consider very important to include a section at the beginning of the diary, before the time slots, where the interviewee would have to answer the following questions:

- What is the most valuable time in the day for you?
- What kind of time are you not replacing?
- What are the times that determine the dynamics of your life?

Once these questions are answered, the respondent's attitude and determination will probably be different, because they will probably realise the importance of care and other activities, and the fact that some of them cannot be replaced.

Similarly, once the diary is completed, it would be interesting to add the following questions that will provide very useful information:

- Has it been useful for you to fill out the diary? Were you aware of all the activities carried out within the household?
- What activities would you like to change? In what activities did you know that you use a lot of time?
- Who is responsible for the organisation and management of the house?

5.5.2 Time poverty: Important issues to consider

The objective is to rescue some of the limitations encountered while developing the present thesis when we analyse time poverty indicators.

Measuring and estimating time poverty is technically challenging. Objectively measuring time use and time deficits requires careful accounting of how individuals allocate blocks of time to specific activities. We argue that time is a basic resource the different allocation of which provides specific levels of well-being, along with income. Time is a scarce resource that individuals and households must allocate to produce goods, obtain services, and pursue rest and relaxation.

Time poverty was proposed as a complement to income poverty. Yet, it remains a relatively unknown measure in both the policy and research spheres, even if it is fundamental to understand areas that are not considered unpaid work in well-being measures. For this reason, we believe that time poverty should be included among the general poverty indicators in national and international political agendas, especially in the current context of the pandemic.

Time poverty focuses on how the resources that people command determine what they are able to achieve in terms of rest and time available, as critical components of their quality of life. The definition of time poverty we use is the following: it is the condition of individuals who 'do not have enough time for rest and leisure after taking into account the time spent working, whether in the labour market, for domestic and care work, or for other activities' (Wodon & Blackden, 2006).

However, there are clear limitations in the way time poverty is measured, and future research works should address the improvement of poverty measures. Some of the limitations are described below.

First: Understanding the internal dynamics of the household is not an easy task. Moreover, this dynamic is heavily influenced by gender roles. More careful analyses are needed in order to understand time poverty at household level and at individual level. These measures will most likely provide useful information about lack of time and individual time poverty, possibly revealing as well the challenges resulting from inequities in intrahousehold allocation of time, tasks and resources (Williams et al., 2016).

Second: One of the main limitations of poverty measures is the difficulty in differentiating those who are time-poor by choice and those who have no other option. Studies on time poverty carried out in developed countries characteristically make clear the connection between time poverty and high occupational status, as it is assumed that in those countries long hours are typically worked by individuals who occupy top-level positions. Moreover, time poverty is more likely to affect dual-career couples and single fathers and mothers with care responsibilities, who deal with a trade-off between time and income, as discussed in chapter 3.

Third: Diaries allow to study the amount of time dedicated to each activity, but not the quality of time, which is crucial (as explained in chapter 1). In fact, Reisch (Reisch, 2001) argues that the quality of time is more important than the quantity. A focus on quality draws attention to the importance of the subjective aspects of time use, such as feeling under stress, doing many activities, or not having time to fulfil all of them, and we agree that these aspects should be taken into consideration when measuring time poverty (Williams et al., 2016).We know that this is a very difficult task, but it will be interesting to be able to introduce in some way some subjective measures on the poverty studies.

Fourth: All definitions of time poverty are based on a delineation of time into a sum of different types of activities. But even when such classification scheme is used, there is still substantial variation in how activities are classified. Ultimately, all measures of time poverty aggregate time blocks into what is considered necessary time or committed time (Williams et al., 2016). For example, the poverty measure used in the present work considers all care-related activities as housework, including help in other households, which in the HETUS activity classification is considered as voluntary. A consensus about all types of care work and other works included in poverty measures is necessary in order to establish standardised and comparable poverty measures that comprise all aspects of well-being.

Fifth: Another important issue is related to the type of time considered in time-poverty measures. Time-poverty research defines discretionary time similarly to discretionary income, i.e., as 'strictly necessary'. However, people can experience different levels of discretion in how they allocate their time—whether an hour is dedicated to producing income, looking after their children, or providing food to their families. Likewise, not every hour of discretionary time will be experienced in the same way. Sorting activities into necessary and discretionary categories is a required simplification for measuring time poverty. We consider future research work should examine whether and how to identify categories. In this work we did not use the discretionary time because of the limitations and the assumption associated related to the minimum requirement for each classification.

Sixth: In poverty measures, it is crucial to include secondary activities and to analyse the importance of multitasking and its implications on time poverty and time stress. No measures have thus far included this. An option might be to add up the time devoted to primary and secondary activities, with some specific weights, for the secondary activities.

Seventh: As already explained in chapter 3, we define the poverty line in relation to the available time. However, available time is defined as the counterpart of work (24 hours: work minus necessary activities and paid and unpaid work equals available time). Therefore, further criteria are needed to isolate available time. Three such criteria often referred to in the literature imply the individual's own experience. The first one is freedom of choice, i.e., the individual's freedom to do or not do an activity; this aspect is central in many definitions of available time. The second one concerns emotional aspects, such as enjoying the activity, and the third one often concerns the frontiers between time available and care, which are not very clear. For example, playing with one's children in the park may be considered a very tiring activity and an obligation, but it can also be counted as available time if the person feels it is the most enjoyable thing for them at the moment.

Eighth: An additional difference between time poverty and income poverty is that the former is mostly experienced during the years of adulthood. For this reason, it is essential for future time-use research to adopt a life-course perspective and investigate whether the experience of time deprivation has a lasting effect on a person's behaviour, time allocation, and health after the decrease or relinquishment of work and family responsibilities. This could be understood as an additional source of cumulative disadvantage in later life, particularly for women. It is only by such empirical investigations that we can assess the social relevance of time poverty, and its standing amongst other social inequalities (Chatzitheochari & Arber, 2012).

Nine: Also we find interesting those measure that give economic value to unpaid work time in order to get time-income poverty measures, however there are many criticism on giving

and how this monetary value is attributed to unpaid work. In that sense further studies and greater agreement in necessary, that must take into consideration full value of the unpaid work and not assign the minimum wage to this central work.

We believe time poverty can play an important role in policy research and evaluation and in intervention planning. Policies that increase available time to the time-poor, as those that increase income among the income-poor, are likely to have multiple short- and long-term effects among poor individuals and their families. In combination with income poverty, time poverty may help identify groups at risk of a number of poor outcomes, which may particularly benefit from certain interventions.

Time poverty fits within a broader literature highlighting the need for an expanded set of measures to understand the state of society, going beyond GDP and income-poverty rates. Like these indicators, it uses a basic unit required in creating quality of life, assessing command over a critical resource. In order to be a useful measure, however, more rigor must be applied to measuring the underlying time of interest and in the choice of thresholds against which that sum of time is adjudicated. While we recognise the many assumptions that need to be made when categorising activities, we highlight the need for a systematic and transparent categorisation of time-use activities when defining and calculating time poverty. Not all studies have been clear in how they define and categorise activities, and where studies have been transparent, there has been little agreement, limiting comparison across studies.

Theoretical and methodological discussions should focus on the advantages and disadvantages of relative versus absolute time-poverty measures. An absolute measure has implications for cross-country comparisons of time poverty, while implying there is indeed a minimum level of time required to maintain some basic standard of living. Relative time-poverty measures do not assume a subsistence level of time, and thus the categorisation of activities into necessary and discretionary becomes less critical. In addition, more discussion and research is needed on individual versus household time-poverty rates, as well as on all the issues reflected in this work related to children and the elderly.

We also need a measure that takes into consideration the quality not just the quantity of time, and the autonomy of decisions made concerning time use. Moreover, all care-related activities carried out in one's own household and other households should be taken into account, using measures that also consider supervision, organisation and control of activities at the household level.

6. Conclusion

The initial objective of this thesis was to study time poverty from a multidimensional perspective. However, this objective was displaced by the interest aroused by the very limitations in the data used for the analysis of time poverty.

According to Carrasco and Recio, the use of information from time-use surveys for policy formulation has not been as expected for two reasons. The first one refers to a clear lack of political will to unravel the roots of inequalities between women's and men's work. This responds, on the one hand, to the patriarchal ideology, which only gives importance and centrality to the socially assigned activities of the male population, and, on the other, to the capitalist ideology of maximum benefit, which exploits domestic work and self-care, and is not interested in making visible the process of plundering or dispossession (Cristina Carrasco & Recio, 2014).

Despite the fact that studies on the use of time represent an important revolutionary in the analysis of domestic and care work, as they have allowed to gather information about the time devoted by women and men to work at home, they respond to the quantitative model of time that is typical of industrial societies. A model with important limitations to go beyond the purely quantitative and account for the relationship between the use, content and management of time and the level of well-being of the population. The objective would thus be to connect time-use analysis with studies on the quality of life or good living, in order to offer specific information that is normally not considered, and to raise the issue of domestic and care work as central to the subsistence, reproduction and sustainability of life.

We have focused on the idea of 'moving' time from the market to the households, trying to break the market-oriented theoretical framework, and, most especially, to pay attention to care time, through the study of time-use surveys. As mentioned many times in this thesis, the characteristics of care and domestic work are not comparable with those of the market; this kind of work requires specific qualifications and abilities, as well as ways of organising and structuring life and work that are different from those typically or traditional known.

Similarly, the study of time spent on domestic and care work through time-use surveys is often based on a commercial concept of time, typical of an industrial society that prioritises the quantitative dimension, forgetting the most subjective characteristics of activities that are directly dedicated to meet the needs—both biological and emotional—of people.

Therefore, from our perspective, it is necessary to abandon the idea of business time as a reference and to consider all the times that fall outside the scope of the market, especially those devoted to domestic and care work, which offer information about the well-being of people. In this sense, we insist on the idea that time-use surveys should take into consideration all these aspects.

This proposal aims at facilitating a change of perspective in the way time is understood, registered and analysed, going beyond the quantitative time model that was born with the industry and is currently at the basis of time-use surveys—as well as reinforced by them.

We must take into account the totality of people's activities and social reality, considering all the experiences that give meaning to life: the different jobs, the times of care, leisure, and social participation, etc., which form a whole that is impossible to analyse separately. Those activities not only require a certain number of hours, but also a certain distribution in coordination with other people's time. And it is also crucial to remember that having some freedom to organise and manage one's own time, and to have autonomy over it, is an important source of well-being.

It is also necessary to establish priorities. If the objective is to guarantee and increase the population's welfare, the time devoted to domestic and care work that tends to satisfy people's basic needs should be considered essential, as well as a central part of the analysis. This requires studying people's care needs throughout their life cycle and the time (duration and distribution) that is necessary to cover them. And this needs to be done by using various significant and measurable variables.

Finally, this thesis work has also highlighted the current strong inequalities between women's and men's use of time. Fairer societies are associated with fairer distributions in the use of time, and in order to do this task properly we need proper tools that allow to understand in a better way all these inequalities.

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Instituto Nacional de Estadística

Encuesta de Empleo del Tiempo 2009-2010
Diario de Empleo del Tiempo

3

NÚMERO DE CUESTIONARIO:

A. Identificación

1. Identificación de la sección

Provincia _____ ☐☐

Código _____ ☐☐☐☐☐ – ☐

Municipio _____

_____ ☐☐☐☐

Distrito/sección _____ ☐☐ – ☐☐☐

Año/trimestre/semana ☐☐ ☐ ☐☐

DOCUMENTO PROTEGIDO
INE
POR EL SECRETO ESTADÍSTICO

2. Datos de la vivienda y hogar

Nº de orden de la vivienda _____ ☐☐

Nº de orden del hogar _____ ☐

Código del entrevistador _____ ☐☐

Nº de orden de la persona a la que se refiere la información ____ ☐☐

3. Nombre de la persona y fecha de cumplimentación

Nombre de la persona que debe cumplimentar el diario _____

Por favor, rellene el diario el . . . . . ☐☐ día ☐☐ mes ☐☐ año

4. Fecha de cumplimentación por posposición

Fecha por posposición ☐☐ día ☐☐ mes ☐☐ año

Naturaleza, características y finalidad

La Encuesta de Empleo del Tiempo es una fuente de información estadística comparable a nivel de la Unión Europea, diseñada con la finalidad de obtener datos comparativos sobre el modo de vida de las personas y la distribución y utilización de su tiempo.

Legislación

Secreto Estadístico

Serán objeto de protección y quedarán amparados por el **secreto estadístico** los datos personales que obtengan los servicios estadísticos (art. 13.1 de la Ley de la Función Estadística Pública de 9 de mayo de 1989, (LFEP)).

Todo el personal estadístico tendrá la obligación de preservar el secreto estadístico (art.17.1 de la LFEP).

Obligación de facilitar los datos

Las Leyes 4/1990 y 13/1996 establecen la **obligación de facilitar los datos** que se soliciten para la elaboración de esta Estadística.

Los servicios estadísticos podrán solicitar datos de las personas físicas y jurídicas nacionales y extranjeras, residentes en España (art. 10.1 de la LFEP).

Todas las personas físicas y jurídicas que suministren datos **deben contestar de forma veraz, exacta, completa y dentro de los plazos** a las preguntas ordenadas en la debida forma por parte de los servicios estadísticos (art. 10.2 de la LFEP).

Para velar por el cumplimiento de estas normas la LFEP (art. 48) otorga al INE capacidad sancionadora.

123456789

Instrucciones de cumplimentación

¿Cómo se debe cumplimentar el diario?

Si realizó más de una actividad simultáneamente, escriba la que considere principal.

Si realizó más de una actividad consecutiva en el intervalo de 10 minutos, incluya la que le llevó más tiempo.

Si estaba haciendo algo que considera demasiado privado regístrelo como personal.

Hora	(1) ¿Qué estaba haciendo? Escriba su **actividad principal** para cada intervalo de 10 minutos. Una actividad en cada línea.	Ordenador o internet @	(2) ¿Qué más estaba haciendo? Registre la más importante de las actividades que realizaba al mismo tiempo que la actividad principal.	Ordenador o internet @
¿A qué hora comenzó esta actividad? 23 hh 10 mm				
06:00–06:10	Dormir	☐		☐
06:10–06:20	"	☐		☐
06:20–06:30	"	☐		☐
06:30–06:40	Aseo, ducha	☐		☐
06:40–06:50	Despertar a los niños	☐		☐
06:50–07:00	Vestirme	☐	Escuchar la radio	☐
07:00–07:10	Desayunar	☐	Leer una revista	☐
10:50–11:00	Trabajo	☒		☐
11:00-11:10	"	☒		☐
11:10-11:20	Tomar café	☐	Charlar con los compañeros	☐
18:00–18:10	Autobús del trabajo al colegio	☐	Escuchar la radio	☐
18:10–18:20	Hablar con la maestra	☐		☐
18:20–18:30	Ir a pie al supermercado	☐	Charlar con los niños	☐
18:30–18:40	Comprar para mí y el vecino	☐	"	☐
18:40–18:50	"	☐	"	☐
18:50–19:00	Vuelta a casa a pie	☐	Hablando por el móvil	☐
19:00–19:10	Entregar la compra al vecino	☐	Hablar con el vecino	☐
19:10-19:20	Colocar compra en la nevera	☐	Escuchar la radio	☐
19:20-19:30	Comprar entradas por internet	☒	"	☐

06

18

Utilice una flecha o comillas para indicar que una actividad dura más de 10 minutos

Detalle si lee la prensa, libros, revistas...

No es necesario que detalle lo que estaba haciendo en el trabajo pero anote lo que hace durante los descansos o las pausas para la comida en el trabajo, por ejemplo: comer, dar un paseo... Si se lleva trabajo a casa, menciónelo.

Separe los desplazamientos de la actividad causante de los mismos, por ejemplo: caminar hasta la parada del autobús, ir en autobús hasta el centro comercial, comprar, ir en autobús a casa...

Marque una cruz si en la actividad utiliza ordenador o internet

En las labores del hogar y el cuidado de los niños concrete lo que estaba haciendo, por ejemplo: hacer la cena, lavar los platos, calentar leche, dar de comer a los niños, acostarlos, cortar el césped, limpiar el coche, barrer la casa, limpiar el patio...

Distinga entre las clases y el estudio en casa. Describa el tipo de estudios: reglados (educación primaria, formación profesional, estudios universitarios...) o no reglados (pintura, música, idiomas, informática, bricolaje...). Si los estudios son parte de un trabajo remunerado, anótelo.

Estar acompañado no implica que se esté realizando la actividad conjuntamente, sino que la persona se encuentra cerca físicamente. No es necesario contestar esta pregunta para el tiempo que pasa durmiendo.

(3) ¿Dónde estaba? Anote el **lugar o el medio de transporte,** por ejemplo: Casa, casa de unos amigos, escuela, oficina, lugar de trabajo, tienda, a pie, en coche, en el autobús.	**¿Estaba solo o en compañía de alguien conocido?** Marque con una cruz el recuadro correspondiente. Puede poner más de una **X** por línea.						**Hora**	NO CUMPLIMENTE ESTAS COLUMNAS		
	Solo	Con otros miembros del hogar				Con otros conocidos				
		Pareja	Padre/ Madre	Menores de 10 años	Otros			1	2	3
Casa	☐	☐	☐	☐	☐	☐	06:00–06:10			
	☐	☐	☐	☐	☐	☐	06:10–06:20			
	☐	☐	☐	☐	☐	☐	06:20–06:30			
	☒	☐	☐	☐	☐	☐	06:30–06:40			
	☐	☐	☐	☒	☐	☐	06:40–06:50			
	☒	☐	☐	☐	☐	☐	06:50–07:00			
	☒	☐	☐	☐	☐	☐	07:00–07:10			
Si considera que la actividad que realiza es ayuda de algún tipo (totalmente o en parte) para alguien ajeno a su hogar hágalo constar. Por ejemplo, "Ayudar a amigos en la reparación de su casa".										
Oficina	☒	☐	☐	☐	☐	☐	10:50–11:00			
"	☐	☐	☐	☐	☐	☒	11:00-11:10			
Cafetería externa	☐	☐	☐	☐	☐	☒	11:10-11:20			
Anote el medio de transporte en la columna ¿Dónde estaba?										
Autobús	☒	☐	☐	☐	☐	☐	18:00–18:10			
Colegio	☐	☐	☐	☒	☐	☒	18:10–18:20			
A pie	☐	☐	☐	☐	☐	☐	18:20–18:30			
Supermercado	☐	☐	☐	☐	☐	☐	18:30–18:40			
"	☐	☐	☐	☐	☐	☐	18:40–18:50			
A pie	☐	☐	☐	☒	☐	☐	18:50–19:00			
En casa del vecino	☐	☐	☐	☐	☐	☒	19:00–19:10			
En casa	☐	☐	☐	☒	☐	☐	19:10-19:20			
"	☐	☒	☐	☐	☐	☐	19:20-19:30			

B. Diario

Hora	(1) ¿Qué estaba haciendo? Escriba su **actividad principal** para cada intervalo de 10 minutos. Una actividad en cada línea. ¿A qué hora comenzó esta actividad? ☐☐ hh ☐☐ mm	Ordenador o internet @	(2) ¿Qué más estaba haciendo? Registre la más importante de las actividades que realizaba al mismo tiempo que la actividad principal.	Ordenador o internet @
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07:30–07:40		☐		☐
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10:40–10:50		☐		☐
10:50–11:00		☐		☐

(3) ¿Dónde estaba? Anote el **lugar o el medio de transporte,** por ejemplo: Casa, casa de unos amigos, escuela, oficina, lugar de trabajo, tienda, a pie, en coche, en el autobús.	¿Estaba solo o en compañía de alguien conocido? Marque con una cruz el recuadro correspondiente. Puede poner más de una **X** por línea.						Hora	NO CUMPLIMENTE ESTAS COLUMNAS		
	Solo	Con otros miembros del hogar				Con otros conocidos				
		Pareja	Padre/ Madre	Menores de 10 años	Otros			1	2	3
	☐	☐	☐	☐	☐	☐	06:00–06:10			
	☐	☐	☐	☐	☐	☐	06:10–06:20			
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	☐	☐	☐	☐	☐	☐	10:40–10:50			
	☐	☐	☐	☐	☐	☐	10:50–11:00			

Hora	(1) ¿Qué estaba haciendo? Escriba su **actividad principal** para cada intervalo de 10 minutos. Una actividad en cada línea.	Ordenador o @ internet	(2) ¿Qué más estaba haciendo? Registre la más importante de las actividades que realizaba al mismo tiempo que la actividad principal.	Ordenador o @ internet
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(3) ¿Dónde estaba? Anote el **lugar o el medio de transporte,** por ejemplo: Casa, casa de unos amigos, escuela, oficina, lugar de trabajo, tienda, a pie, en coche, en el autobús.	¿Estaba solo o en compañía de alguien conocido? Marque con una cruz el recuadro correspondiente. Puede poner más de una **X** por línea.						Hora	NO CUMPLIMENTE ESTAS COLUMNAS		
	Solo	Con otros miembros del hogar				Con otros conocidos		1	2	3
		Pareja	Padre/ Madre	Menores de 10 años	Otros					
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Hora	(1) ¿Qué estaba haciendo? Escriba su **actividad principal** para cada intervalo de 10 minutos. Una actividad en cada línea.	Ordenador o @ internet	(2) ¿Qué más estaba haciendo? Registre la más importante de las actividades que realizaba al mismo tiempo que la actividad principal.	Ordenador o @ internet
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20:50–21:00		☐		☐

16 17 18 19 20

(3) ¿Dónde estaba? Anote el **lugar o el medio de transporte,** por ejemplo: Casa, casa de unos amigos, escuela, oficina, lugar de trabajo, tienda, a pie, en coche, en el autobús.	¿Estaba solo o en compañía de alguien conocido? Marque con una cruz el recuadro correspondiente. Puede poner más de una **X** por línea.						Hora	NO CUMPLIMENTE ESTAS COLUMNAS		
	Solo	Con otros miembros del hogar				Con otros conocidos		1	2	3
		Pareja	Padre/ Madre	Menores de 10 años	Otros					
	☐	☐	☐	☐	☐	☐	16:00–16:10			
	☐	☐	☐	☐	☐	☐	16:10–16:20			
	☐	☐	☐	☐	☐	☐	16:20–16:30			
	☐	☐	☐	☐	☐	☐	16:30–16:40			
	☐	☐	☐	☐	☐	☐	16:40–16:50			
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	☐	☐	☐	☐	☐	☐	17:40–17:50			
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	☐	☐	☐	☐	☐	☐	20:20–20:30			
	☐	☐	☐	☐	☐	☐	20:30–20:40			
	☐	☐	☐	☐	☐	☐	20:40–20:50			
	☐	☐	☐	☐	☐	☐	20:50–21:00			

Hora	(1) ¿Qué estaba haciendo? Escriba su **actividad principal** para cada intervalo de 10 minutos. Una actividad en cada línea.	Ordenador o @ internet	(2) ¿Qué más estaba haciendo? Registre la más importante de las actividades que realizaba al mismo tiempo que la actividad principal.	Ordenador o @ internet
21:00–21:10		☐		☐
21:10–21:20		☐		☐
21:20–21:30		☐		☐
21:30–21:40		☐		☐
21:40–21:50		☐		☐
21:50–22:00		☐		☐
22:00-22:10		☐		☐
22:10-22:20		☐		☐
22:20-22:30		☐		☐
22:30-22:40		☐		☐
22:40-22:50		☐		☐
22:50-23:00		☐		☐
23:00-23:10		☐		☐
23:10-23:20		☐		☐
23:20-23:30		☐		☐
23:30-23:40		☐		☐
23:40-23:50		☐		☐
23:50-00:00		☐		☐
00:00-00:10		☐		☐
00:10-00:20		☐		☐
00:20-00:30		☐		☐
00:30-00:40		☐		☐
00:40-00:50		☐		☐
00:50-01:00		☐		☐
01:00-01:10		☐		☐
01:10-01:20		☐		☐
01:20-01:30		☐		☐
01:30-01:40		☐		☐
01:40-01:50		☐		☐
01:50-02:00		☐		☐

(3) ¿Dónde estaba? Anote el **lugar o el medio de transporte,** por ejemplo: Casa, casa de unos amigos, escuela, oficina, lugar de trabajo, tienda, a pie, en coche, en el autobús.	¿Estaba solo o en compañía de alguien conocido? Marque con una cruz el recuadro correspondiente. Puede poner más de una **X** por línea.						Hora	NO CUMPLIMENTE ESTAS COLUMNAS		
	Solo	Con otros miembros del hogar				Con otros conocidos		1	2	3
		Pareja	Padre/ Madre	Menores de 10 años	Otros					
	☐	☐	☐	☐	☐	☐	21:00–21:10			
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	☐	☐	☐	☐	☐	☐	01:00-01:10			
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	☐	☐	☐	☐	☐	☐	01:20-01:30			
	☐	☐	☐	☐	☐	☐	01:30-01:40			
	☐	☐	☐	☐	☐	☐	01:40-01:50			
	☐	☐	☐	☐	☐	☐	01:50-02:00			

Hora	(1) ¿Qué estaba haciendo? Escriba su **actividad principal** para cada intervalo de 10 minutos. Una actividad en cada línea.	Ordenador o @ internet	(2) ¿Qué más estaba haciendo? Registre la más importante de las actividades que realizaba al mismo tiempo que la actividad principal.	Ordenador o @ internet
02:00–02:10		☐		☐
02:10–02:20		☐		☐
02:20–02:30		☐		☐
02:30–02:40		☐		☐
02:40–02:50		☐		☐
02:50–03:00		☐		☐
03:00–03:10		☐		☐
03:10–03:20		☐		☐
03:20–03:30		☐		☐
03:30–03:40		☐		☐
03:40–03:50		☐		☐
03:50–04:00		☐		☐
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04:10–04:20		☐		☐
04:20–04:30		☐		☐
04:30–04:40		☐		☐
04:40–04:50		☐		☐
04:50–05:00		☐		☐
05:00–05:10		☐		☐
05:10–05:20		☐		☐
05:20–05:30		☐		☐
05:30–05:40		☐		☐
05:40–05:50		☐		☐
05:50–06:00		☐		☐

02 03 04 05

¿A qué hora acabó esta actividad? ☐☐ **hh** ☐☐ **mm**

(3) ¿Dónde estaba? Anote el **lugar o el medio de transporte,** por ejemplo: Casa, casa de unos amigos, escuela, oficina, lugar de trabajo, tienda, a pie, en coche, en el autobús.	**¿Estaba solo o en compañía de alguien conocido?** Marque con una cruz el recuadro correspondiente. Puede poner más de una **X** por línea.						**Hora**	NO CUMPLIMENTE ESTAS COLUMNAS		
	Solo	Con otros miembros del hogar				Con otros conocidos		**1**	**2**	**3**
		Pareja	Padre/ Madre	Menores de 10 años	Otros					
	☐	☐	☐	☐	☐	☐	02:00–02:10			
	☐	☐	☐	☐	☐	☐	02:10–02:20			
	☐	☐	☐	☐	☐	☐	02:20–02:30			
	☐	☐	☐	☐	☐	☐	02:30–02:40			
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	☐	☐	☐	☐	☐	☐	05:00–05:10			
	☐	☐	☐	☐	☐	☐	05:10–05:20			
	☐	☐	☐	☐	☐	☐	05:20–05:30			
	☐	☐	☐	☐	☐	☐	05:30–05:40			
	☐	☐	☐	☐	☐	☐	05:40–05:50			
	☐	☐	☐	☐	☐	☐	05:50–06:00			

LISTA DE COMPROBACIÓN PARA EL ENTREVISTADOR

Por favor, revise el diario y compruebe lo siguiente:

- Si ha anotado sólo una actividad principal en cada línea y que no existen intervalos sin actividad principal.
- Si queda claro cuáles son las horas de trabajo, incluido el trabajo que el informante pudiera haberse llevado a casa fuera del horario normal.
- Si ha descrito todos los trayectos y medios de transporte.
- Si ha marcado la duración de las actividades secundarias simultáneas, si existen.
- Si ha marcado al menos una X en cada línea de la pregunta en compañía de quién, excepto para el tiempo que transcurre en cama o en actividades de carácter personal.
- Si ha marcado la columna **'@'** en las actividades en las que ha utilizado ordenador o internet.
- Si ha especificado las actividades de cuidado a personas dependientes.
- Si ha anotado las actividades de ayuda realizadas a otros hogares o a personas ajenas al hogar. Esto incluye ayuda a terceros que también son en provecho del propio hogar, por ejemplo, recoger del colegio al hijo del vecino al tiempo que recoge al propio, o hacer compras para familiares a la vez que las realiza para uno mismo.

C. Preguntas

1. ¿Cuándo ha cumplimentado el diario?

Ahora y a lo largo del día de referencia del diario ☐ 1

Al final del día de referencia del diario ☐ 2

Al día siguiente al de referencia del diario ☐ 3

Más tarde: . . . . . días después del de referencia del diario ☐ 4

2. ¿Cómo considera que ha sido este día?

Día habitual ☐ 1 → pasar a pregunta 4

Día inusual ☐ 6

3. ¿Por qué motivo(s) ha sido inusual este día? Puede marcar más de una opción

Día agobiante por la cantidad de tareas a desempeñar ☐ 1

Ha estado enfermo este día ☐ 2

Día libre, de fiesta o de vacaciones ☐ 3

Otro motivo *(especificar)* ..... ☐ 4

4. ¿Estaba de viaje a otra localidad durante el día de referencia del diario? No tenga en cuenta los viajes cotidianos al trabajo o al lugar de estudio, o viajes de duración total inferior a dos horas

No ☐ 1 → pasar a pregunta 5

Sí, de viaje de un solo día dentro del país ☐ 2

Sí, de viaje de un solo día al extranjero ☐ 3

Sí, de viaje pernoctando dentro del país ☐ 4

Sí, de viaje pernoctando en el extranjero ☐ 5

4.1 Si la respuesta es sí:

¿A qué distancia de su casa viajó? Anote la distancia aproximada desde su hogar (sólo un sentido). Si ha hecho varios viajes, anote el más largo.

☐☐☐☐ km

5. En los últimos siete días, ¿realizó algún trabajo remunerado en metálico o en especie por cuenta ajena o trabajó por cuenta propia o como ayuda familiar durante al menos una hora?

Se incluye aprendizaje o formación remunerados

Aunque no trabajase la semana pasada, marque Sí en el caso de que tuviese algún trabajo del que estuviera ausente por algún motivo

Sí ☐ 1 → pasar a página siguiente

No ☐ 6 → Fin de cuestionario

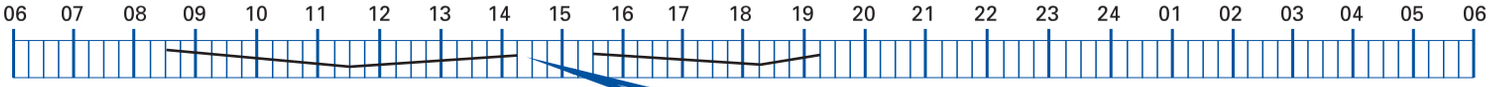
HORARIO DE TRABAJO REMUNERADO

Marque su horario de trabajo mediante una línea que determine el periodo de tiempo. Vea el ejemplo:

- ***Debe hacer coincidir el séptimo día de este semanario con el día asignado para rellenar el diario.***
- Si no trabajó alguno de los días ponga una **x** en el recuadro **No trabajé.**
- **No incluya los tiempos de transporte y las pausas para comer no remuneradas.**
- Incluya, en su caso, el trabajo secundario y el trabajo llevado a casa.

Día de ejemplo

Día	Mes	Día de la semana	No trabajé
11	06	viernes	☐

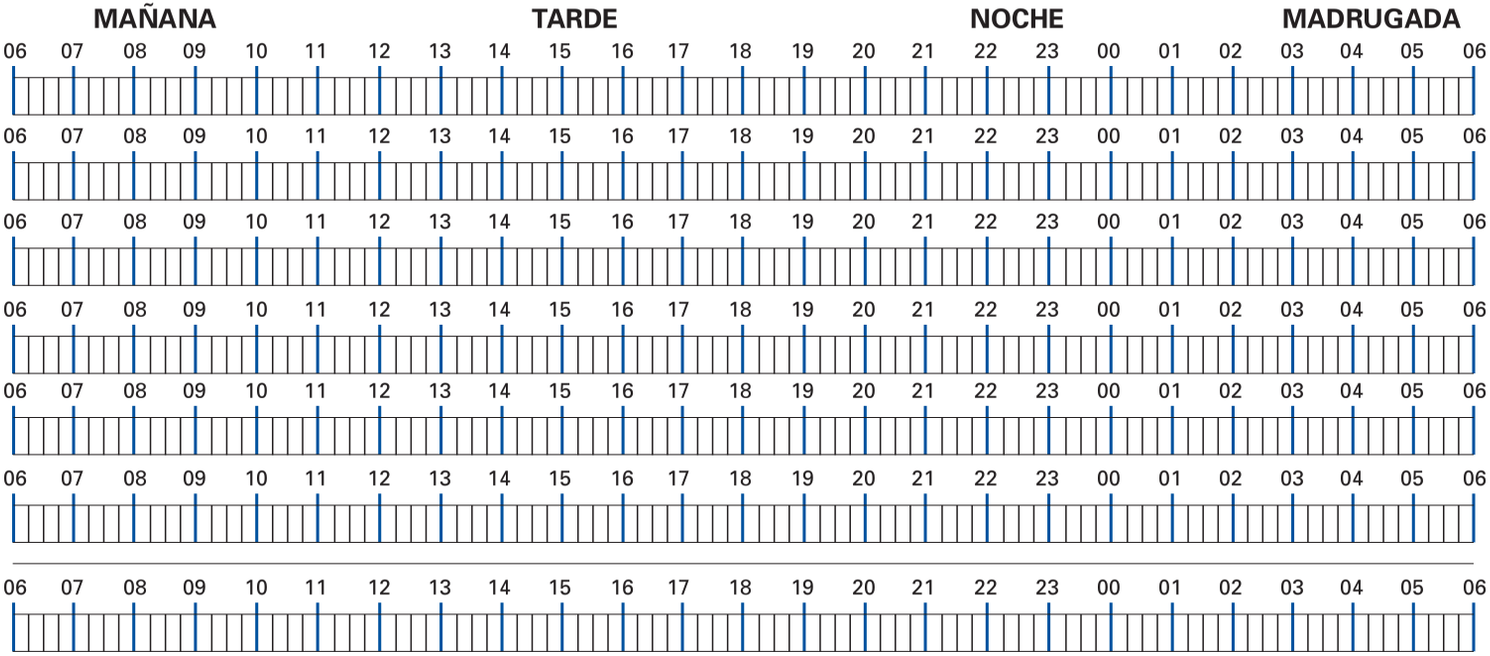


Ejemplo:
El 11 de junio, viernes, trabajó de 8:30 a 19:15 con una pausa para comer de una hora y cuarto de 14:15 a 15:30

¿Cómo considera esta semana de trabajo?

1. Habitual _____ ☐ 1
2. Inusual por ausencia temporal del trabajo ☐ 2
3. Inusual por otros motivos _____ ☐ 3

Día	Mes	Día de la semana	No trabajé
1er día			☐
2º día			☐
3er día			☐
4º día			☐
5º día			☐
6º día			☐
7º día (Día de cumplimentación del diario)			☐



INSTITUTO NACIONAL DE ESTADISTICA

Encuesta de Empleo del Tiempo 2002-2003

Cuestionario del Hogar

1

DOCUMENTO PROTEGIDO
POR EL SECRETO ESTADISTICO

Identificación

Provincia: _____ ☐☐

Código de sección: _____ ☐☐☐☐☐ – ☐

Municipio: _____ ☐☐☐

Distrito – Sección: _____ ☐☐☐☐

Año/trimestre/semana: _____ ☐☐ / ☐ / ☐☐

N° de orden de la vivienda: _____ ☐☐

N° de orden del hogar: _____ ☐

Entrevistador: _____ ☐☐

N° de orden del informante: _____ ☐☐

Fecha de entrevista: _____ ☐☐ día ☐☐ mes ☐☐ año

Naturaleza, características y finalidad

La Encuesta de Empleo del Tiempo es una fuente de información estadística comparable a nivel de la Unión Europea, diseñada con la finalidad de obtener datos comparativos sobre el modo de vida de las personas y la distribución y utilización de su tiempo.

Legislación

Secreto Estadístico

Serán objeto de protección y quedarán amparados por el **secreto estadístico** los datos personales que obtengan los servicios estadísticos (art. 13.1 de la Ley de la Función Estadística Pública de 9 de mayo de 1989, (LFEP)). Todo el personal estadístico tendrá la obligación de preservar el secreto estadístico (art. 17.1 de la LFEP).

Obligación de facilitar los datos

Las Leyes 4/1990 y 13/1996 establecen la **obligación de facilitar los datos** que se soliciten para la elaboración de esta Estadística.

Los servicios estadísticos podrán solicitar datos de las personas físicas y jurídicas nacionales y extranjeras, residentes en España (art. 10.1 de la LFEP).

Todas las personas físicas y jurídicas que suministren datos **deben contestar de forma veraz, exacta, completa y dentro de los plazos** a las preguntas ordenadas en la debida forma por parte de los servicios estadísticos (art. 10.2 de la LFEP).

Para velar por el cumplimiento de estas normas la LFEP (art. 48) otorga al INE capacidad sancionadora.

Identificación de la persona de referencia

Dígame el nombre de la persona que, viviendo habitualmente en este hogar, se considera como persona de referencia:

_____

A. Tabla de composición del hogar

M.H. = Miembro del hogar

Nombre de las personas que residen habitualmente en la vivienda (presentes o ausentes temporalmente por enfermedad, estudios, trabajo,...) (1)	¿Participa del presupuesto del hogar? (2)	¿Es ésta su residencia principal? (Invitados de larga duración, 1 año o más, anoten SÍ) (3)	Si tiene lazos de parentesco con la persona de referencia o es empleado doméstico interno anote SÍ. En otro caso anote NO. (4)	Número de orden de los miembros del hogar (5)
Persona de referencia				0 1
	Sí ☐ → M.H. No ☐ →	Sí ☐ → No ☐ → Fin	Sí ☐ → M.H. No ☐ → Otro hogar*	
	Sí ☐ → M.H. No ☐ →	Sí ☐ → No ☐ → Fin	Sí ☐ → M.H. No ☐ → Otro hogar*	
	Sí ☐ → M.H. No ☐ →	Sí ☐ → No ☐ → Fin	Sí ☐ → M.H. No ☐ → Otro hogar*	
	Sí ☐ → M.H. No ☐ →	Sí ☐ → No ☐ → Fin	Sí ☐ → M.H. No ☐ → Otro hogar*	
	Sí ☐ → M.H. No ☐ →	Sí ☐ → No ☐ → Fin	Sí ☐ → M.H. No ☐ → Otro hogar*	
	Sí ☐ → M.H. No ☐ →	Sí ☐ → No ☐ → Fin	Sí ☐ → M.H. No ☐ → Otro hogar*	
	Sí ☐ → M.H. No ☐ →	Sí ☐ → No ☐ → Fin	Sí ☐ → M.H. No ☐ → Otro hogar*	
	Sí ☐ → M.H. No ☐ →	Sí ☐ → No ☐ → Fin	Sí ☐ → M.H. No ☐ → Otro hogar*	
	Sí ☐ → M.H. No ☐ →	Sí ☐ → No ☐ → Fin	Sí ☐ → M.H. No ☐ → Otro hogar*	

Número total de miembros del hogar ☐☐

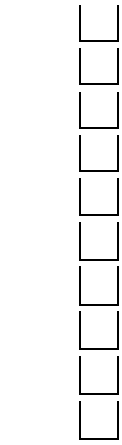
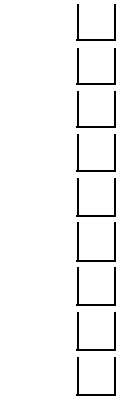
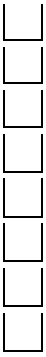
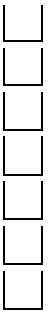
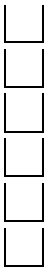
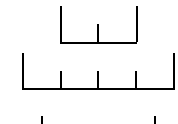
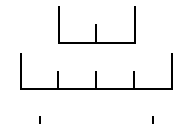
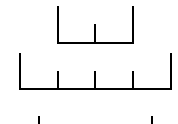
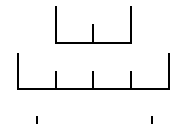
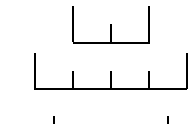
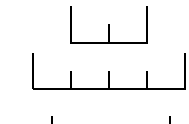
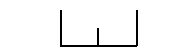
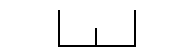
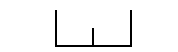
***** Otro hogar dentro de la misma vivienda.

1. Sólo para miembros del hogar

	Nombre/apellido	Nombre/apellido	Nombre/apellido	Nombre/apellido
	N º orden |0|1|	N º orden |0|2|	N º orden |0|3|	N º orden |0|4|
1. Situación de residencia				
1. Presente	☐ 1	☐ 1	☐ 1	☐ 1
6. Ausente	☐ 6	☐ 6	☐ 6	☐ 6
2. Sexo				
1. Varón	☐ 1	☐ 1	☐ 1	☐ 1
6. Mujer	☐ 6	☐ 6	☐ 6	☐ 6
3. Parentesco con:				
|0|1| _____				
|0|2| _____	☐			
|0|3| _____	☐	☐		
|0|4| _____	☐	☐	☐	
|0|5| _____	☐	☐	☐	☐
|0|6| _____	☐	☐	☐	☐
|0|7| _____	☐	☐	☐	☐
|0|8| _____	☐	☐	☐	☐
|0|9| _____	☐	☐	☐	☐
|1|0| _____	☐	☐	☐	☐
|1|1| _____	☐	☐	☐	☐
|1|2| _____	☐	☐	☐	☐
|1|3| _____	☐	☐	☐	☐
|1|4| _____	☐	☐	☐	☐
|1|5| _____	☐	☐	☐	☐
4. Fecha de nacimiento				
1. Mes	☐☐	☐☐	☐☐	☐☐
2. Año	☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐
Edad (sólo si desconoce la fecha de nacimiento)	☐☐☐	☐☐☐	☐☐☐	☐☐☐
5. Relación con la actividad				
Mire la lista de códigos	☐☐	☐☐	☐☐	☐☐

Apartado 3. Códigos de relación de parentesco: Anote las relaciones de parentesco utilizando los códigos, del modo siguiente: la persona de la fila es ... (código) de la persona de la columna.
Ejemplo: Si la persona 04 es hermano de la persona 02 se pondrá en la fila de 04 en la segunda columna (correspondiente a 02) el código 03.

1. Cónyuge o pareja
2. Hijo/a, yerno/nuera
3. Hermano/a, cuñado/a
4. Padre, madre, suegro/a
5. Otro pariente (abuelo/a, nieto/a, sobrino/a, tío/a, primo/a...)
6. No emparentado

Nombre/apellido	Nombre/apellido	Nombre/apellido	Nombre/apellido	Nombre/apellido	Nombre/apellido
N º orden |0|5|	N º orden |0|6|	N º orden |0|7|	N º orden |0|8|	N º orden |0|9|	N º orden |1|0|
☐ 1 ☐ 6	☐ 1 ☐ 6	☐ 1 ☐ 6	☐ 1 ☐ 6	☐ 1 ☐ 6	☐ 1 ☐ 6
☐ 1 ☐ 6	☐ 1 ☐ 6	☐ 1 ☐ 6	☐ 1 ☐ 6	☐ 1 ☐ 6	☐ 1 ☐ 6
					
					
					

Apartado 5. Códigos de relación con la actividad:
Anote el código que considere principal

01. Ocupado/a a tiempo completo.
Trabajó al menos 1 hora la semana anterior por cuenta ajena, por cuenta propia o como ayuda familiar.
02. Ocupado/a a tiempo parcial.
Trabajó al menos 1 hora la semana anterior por cuenta ajena, por cuenta propia o como ayuda familiar.
03. Temporalmente ausente del trabajo por permiso de maternidad/paternidad.
04. Temporalmente ausente del trabajo por otras razones.
05. Parado/a.
06. Recibiendo algún tipo de educación y/o formación.
07. Cobrando una pensión de jubilación o prejubilado/a.
08. Cobrando una pensión de incapacidad permanente o invalidez.
09. Cobrando una pensión de viudedad u orfandad.
10. Realizando las tareas de mi hogar.
Incluido cuidado de niños y adultos.
11. Realizando tareas de voluntariado social.
12. Otra situación.

2. Sólo para miembros del hogar menores de 10 años

Señale los cuidados recibidos y/o la situación escolar de los niños menores de 10 años, empezando por el más pequeño y continuando en orden creciente de edad, así como el promedio de horas semanales que reciben dichas atenciones.
(Puede señalar más de una posibilidad)

N º de orden como miembro del hogar		Niño más pequeño	Siguientes por orden creciente de edad	
		⌊_⌋	⌊_⌋	⌊_⌋
Atenciones regulares		Promedio de horas semanales	Promedio de horas semanales	Promedio de horas semanales
Atendido por personas	1. Familiares del hogar	Sí ☐ 1 → ⌊_⌋ No ☐ 6	Sí ☐ 1 → ⌊_⌋ No ☐ 6	Sí ☐ 1 → ⌊_⌋ No ☐ 6
	2. Personas **NO** remuneradas (familiares ajenos al hogar, amigos, vecinos…)	Sí ☐ 1 → ⌊_⌋ No ☐ 6	Sí ☐ 1 → ⌊_⌋ No ☐ 6	Sí ☐ 1 → ⌊_⌋ No ☐ 6
	3. Personas remuneradas (canguros, niñeras…)	Sí ☐ 1 → ⌊_⌋ No ☐ 6	Sí ☐ 1 → ⌊_⌋ No ☐ 6	Sí ☐ 1 → ⌊_⌋ No ☐ 6
Atendido en alguna institución	4. Guardería, escuela infantil, jardín de infancia,…	Sí ☐ 1 → ⌊_⌋ * No ☐ 6	Sí ☐ 1 → ⌊_⌋ * No ☐ 6	Sí ☐ 1 → ⌊_⌋ * No ☐ 6
	5. Colegio	Sí ☐ 1 → ⌊_⌋ * No ☐ 6	Sí ☐ 1 → ⌊_⌋ * No ☐ 6	Sí ☐ 1 → ⌊_⌋ * No ☐ 6

* Incluya las horas dedicadas a actividades extraescolares realizadas dentro de la institución (siempre que sean regulares).

En el caso de que los niños acudan a alguna institución rellene los siguientes datos:

	Niño más pequeño	Siguientes por orden creciente de edad	
6. La institución en la que pasan más tiempo es:			
Pública _____	☐ 1	☐ 1	☐ 1
Privada _____	☐ 6	☐ 6	☐ 6
7. ¿Comen los niños en la institución?	Sí ☐ 1 No ☐ 6	Sí ☐ 1 No ☐ 6	Sí ☐ 1 No ☐ 6

B. Servicio doméstico

Indique si dispone de servicio doméstico, el número de personas que lo realizan y el promedio de horas semanales que dedican a estas tareas.
Si dispone de varias personas calcule el promedio semanal de horas dedicado por cada una de ellas y anote la suma total.

3. ¿Dispone de servicio doméstico?

Sí ☐ 1 →
- a) Reside en la vivienda ☐ → N º de personas ⌊_⌋ → Total horas semanales ⌊_⌋
- b) No reside en la vivienda ☐ → N º de personas ⌊_⌋ → Total horas semanales ⌊_⌋

No ☐ 6

C. Características de la vivienda principal

4. ¿Qué clase de vivienda y tipo de edificio ocupan?

Vivienda unifamiliar:

- Independiente ☐ 1
- Adosada o pareada ☐ 2

Edificio con más de una vivienda:

- Con menos de 10 viviendas ☐ 3
- Con 10 ó más viviendas ☐ 4

Otro tipo de vivienda:

- Situada en un edificio destinado principalmente a otros fines (colegio, oficina, taller,...) ☐ 5
- Otro tipo de alojamiento fijo (barraca, cabaña, chabola, cueva,...) ☐ 6

5. ¿Cuál es el régimen de tenencia de la vivienda?

- En propiedad ☐ 1
- En alquiler o realquiler, (incluye: las viviendas semigratuitas; las gratuitas siempre que el hogar adelante el pago del alquiler que posteriormente se le restituye; y las gratuitas cedidas por una institución pública o privada sin fines de lucro siempre que no sean propiedad de quien las cede, adelante o no el hogar el pago del alquiler) ☐ 2
- Cedida gratuitamente (excepto las incluidas en el apartado anterior) ☐ 3

6. ¿Cuántas habitaciones tiene la vivienda?

Se excluyen: cocinas, cuartos de baño o aseo, terrazas, pasillos, vestíbulos, descansillos, vestidores, despensas y las habitaciones utilizadas exclusivamente para fines profesionales.

Se incluyen: dormitorios, comedores, salones, cuartos de estar,... También se incluirán: trasteros, sótanos y desvanes, que teniendo 4 m^2 o más y acceso desde el interior de la vivienda, se utilicen para fines residenciales.

- Nº de habitaciones ☐☐

7. ¿Dispone la vivienda de las siguientes instalaciones?

	Sí	No
1. Cocina independiente	☐ 1	☐ 6
2. Instalación fija de baño o ducha	☐ 1	☐ 6
3. Inodoro con agua corriente en el interior de la vivienda	☐ 1	☐ 6
4. Agua caliente — Individual	☐ 1	☐ 6
4. Agua caliente — Colectiva	☐ 1	☐ 6
5. Calefacción con sistema común de alimentación — Individual	☐ 1	☐ 6
5. Calefacción con sistema común de alimentación — Colectiva	☐ 1	☐ 6
6. Refrigeración (aire acondicionado, aparatos móviles,...; NO ventiladores)	☐ 1	☐ 6
7. Garaje	☐ 1	☐ 6
8. Lugar exterior donde poder sentarse (terraza, balcón, patio, jardín,...)	☐ 1	☐ 6
9. Huerta o corral adosado a la vivienda	☐ 1	☐ 6
10. Lugar utilizado como taller de trabajo (garaje, cobertizo o cuarto especial)	☐ 1	☐ 6

8. En la actualidad, ¿Están construyendo una casa para que sea su residencia habitual, una segunda vivienda o una dependencia?

Sí ☐ 1 No ☐ 6

9. En la actualidad, ¿Realizan grandes reparaciones en su residencia principal o en su segunda vivienda?

Sí ☐ 1 No ☐ 6

D. Bienes de equipamiento del hogar

10. Para cada uno de los siguientes bienes, indique si el hogar o alguno de sus miembros dispone de ellos o no, independientemente de que sean propiedad del hogar, estén alquilados o puestos a su disposición de otra forma.

	Sí	No	¿Cuántos?
1. TV	☐ 1	☐ 6	☐☐
2. TV por cable	☐ 1	☐ 6	
3. TV vía satélite	☐ 1	☐ 6	
4. Vídeo	☐ 1	☐ 6	
5. DVD	☐ 1	☐ 6	
6. Equipo de música	☐ 1	☐ 6	
7. Ordenador (PC, portátil...)	☐ 1	☐ 6	☐☐
8. Conexión a Internet	☐ 1	☐ 6	
9. Teléfono fijo	☐ 1	☐ 6	
10. Teléfono móvil	☐ 1	☐ 6	☐☐

	Sí	No	¿Cuántos?
11. Motocicleta de uso privado	☐ 1	☐ 6	
12. Automóvil de uso privado	☐ 1	☐ 6	☐☐
13. Microondas	☐ 1	☐ 6	
14. Lavavajillas	☐ 1	☐ 6	
15. Lavadora	☐ 1	☐ 6	
16. Secadora de ropa	☐ 1	☐ 6	
17. Frigorífico	☐ 1	☐ 6	
18. Congelador independiente	☐ 1	☐ 6	
19. Vivienda secundaria	☐ 1	☐ 6	

E. Cultivo de plantas o huertos y cuidado de animales

11. Conteste a las preguntas sobre cultivo de plantas o huertos y cuidado de animales para cada una de las siguientes categorías.

	¿Alguien del hogar cuida o cultiva plantas?	**¿Obtienen ingresos por la venta de algún producto de los que cultivan?**
1. Plantas comestibles, hortalizas, cereales, legumbres, verduras, árboles frutales,...	Sí ☐ 1 → No ☐ 6	Sí ☐ 1 / No ☐ 6
2. Plantas ornamentales	Sí ☐ 1 → No ☐ 6	Sí ☐ 1 / No ☐ 6
	¿Alguien del hogar cuida o adiestra animales?	**¿Obtienen ingresos por la venta de algún producto (bien o servicio) derivado del cuidado o adiestramiento de animales?**
3. Animales domésticos (o de granja)	Sí ☐ 1 → No ☐ 6	Sí ☐ 1 / No ☐ 6
4. Mascotas (o animales de compañía)	Sí ☐ 1 → No ☐ 6	Sí ☐ 1 / No ☐ 6

F. Ingresos económicos

12. ¿Perciben actualmente los miembros de su hogar ingresos monetarios regulares procedentes de las fuentes que se indican? Considere los ingresos de todos los miembros del hogar, incluidos los menores y cualquier ingreso que pueda ser cobrado por el hogar en su conjunto.

	Sí	No
1. Trabajo por cuenta ajena (sueldos o salarios)	☐ 1	☐ 6
2. Trabajo por cuenta propia	☐ 1	☐ 6
3. Pensiones contributivas y no contributivas (jubilación, invalidez, viudedad,...)	☐ 1	☐ 6
4. Subsidios y prestaciones de desempleo	☐ 1	☐ 6
5. Otros subsidios y prestaciones sociales regulares (becas, ayudas a la familia, incapacidad transitoria,...)	☐ 1	☐ 6
6. Rentas de la propiedad y del capital (alquileres, arrendamientos, dividendos, intereses, rentas de la propiedad intelectual, rentas de las compañías de seguros y pensiones derivadas de pólizas privadas)	☐ 1	☐ 6
7. Otros ingresos regulares sin mediar contraprestación laboral: transferencias de otros hogares, donaciones de instituciones, rentas regulares de seguros de vida -caso vida-,...	☐ 1	☐ 6

Entrevistador:
- Si el hogar percibe ingresos de una única fuente (Un solo SÍ, pasar a la pregunta 14)
- Si el hogar percibe ingresos de más de una fuente (Varios SÍ, pasar a la pregunta 13)
- Si el hogar no percibe ingresos (Todas NO, pasar a la pregunta 15)

13. Si el hogar percibe ingresos de más de una fuente, anote la de mayor cuantía. (Ésta puede resultar como suma de los ingresos de los miembros del hogar, que procedan de la misma fuente).

- Fuente de ingresos de mayor cuantía ☐

Entrevistador: Consulte la numeración a cada fuente de ingresos en la pregunta 12 y anote el número que corresponda.

14. Indique en qué intervalo están comprendidos los ingresos mensuales medios netos del total de miembros del hogar al mes, es decir, la suma de las rentas mensuales procedentes de todas las fuentes, de todos los miembros del hogar deduciendo los impuestos y las cotizaciones sociales, (o los gastos deducibles, retenciones a cuenta, pagos fraccionados, si perciben ingresos de trabajo por cuenta propia). (Incluya la parte proporcional mensual correspondiente de las pagas extraordinarias y otros ingresos extraordinarios siempre que se perciban regularmente).

- Menos de 500 € ☐ 1
- De 500 a 999,99 € ☐ 2
- De 1.000 a 1.499,99 € ☐ 3
- De 1.500 a 1.999,99 € ☐ 4
- De 2.000 a 2.499,99 € ☐ 5
- De 2.500 a 2.999,99 € ☐ 6
- De 3.000 a 4.999,99 € ☐ 7
- 5.000 € y más ☐ 8

Especificación de las actividades de ayuda (Pregunta 15).

1. Preparación de comidas

Preparación de comidas, repostería, poner y quitar la mesa.
Lavar los platos, secarlos, colocarlos.
Elaboración de conservas caseras, congelación de alimentos.

2. Mantenimiento de la casa

Limpieza de la vivienda, aspirar, lavar o encerar los suelos, limpiar cristales, hacer las camas, ordenar, organizar la casa.
Limpiar el sótano, garaje o patio, retirar la nieve.
Tratamiento de la basura, selección de papeles, botellas,...
Abastecimiento de material de calefacción y agua, cortar y recoger leña.
Colocar las compras, mantenimiento de las plantas de interior, preparación de maletas o paquetes para un viaje, una mudanza.

3. Confección y cuidado de prendas de vestir y del hogar

Lavar, hacer la colada, planchar, colocar la ropa.
Cuidado de la ropa de vestir, calzado, ropa de hogar.
Confección de productos textiles, tejer, bordar, hacer vestidos, tricotar,...

4. Jardinería y cuidados de animales domésticos

Cultivo de plantas comestibles y ornamentales.
Cuidado de animales domésticos, mascotas, animales de compañía.
Sacar el perro a pasear.

5. Construcción y reparaciones

Construcción y renovación de la casa, pintar, colocar papel pintado y/o moqueta, decoración, reparación de instalaciones y limpieza de todas estas obras.
Reparaciones de equipamiento tales como herramientas, equipos de esquí u otros deportes.
Mantenimiento de vehículos (realizados físicamente por las personas que ayudan) tales como cambiar ruedas de automóviles, arreglar pinchazos de bicicletas, limpieza de barcos,...
Fabricación de muebles y utensilios del hogar.

6. Compras

Compra de bienes de consumo diario tales como bebidas, periódicos, cigarrillos, caramelos, comida, ropa, calzado, libros, compras con fines de mantenimiento y reparación.
Bienes de consumo duraderos como muebles, automóviles,...

7. Gestiones del hogar y servicios

Servicios administrativos, correo, banco, comisaría de policía, inspección del automóvil, declaración de la renta.
Ir a la lavandería, zapatero, agencia de viajes.
Servicios de mantenimiento de vehículos, lavado automático, llevar el coche al taller, aparcar el coche.
Servicios de transporte: acercar a alguien al trabajo, al supermercado,...
Servicios veterinarios para los animales de compañía.
Previsión del presupuesto, contabilidad, elaboración de listas de compras.
Llamadas telefónicas o correspondencia a instituciones o a la administración.
Uso de la informática para la gestión del hogar.

8. Cuidado de los niños

Cuidados físicos, vigilancia de los niños.
Lectura, juego, conversación, ayuda en sus deberes o estudios.
Reunión del colegio/jardín de infancia.
Acompañar a los niños al colegio, al médico,...Transporte de los niños.

9. Cuidados de adultos (excepto trabajo doméstico)

Servicios personales a adultos en general, cuidado de adultos discapacitados, enfermos o ancianos. Aseo, corte de pelo, masaje.
Ayuda psicológica, información y asesoramiento.
Acompañar a un adulto al médico. Visitas en el hospital.
Lectura, juego, conversación.

G. Ayudas recibidas por el Hogar

15. Durante las últimas cuatro semanas, ¿han recibido ayuda de alguna persona AJENA al hogar (servicio doméstico no residente, amigos, vecinos, familiares que no viven con usted,…) para los siguientes quehaceres?
(Independientemente de que la ayuda sea gratuita o pagada)

No se incluyen servicios prestados por empresas u organismos públicos.

En la página anterior puede encontrar con detalle el contenido de cada rúbrica.

Actividades de ayuda recibidas	¿Han recibido ayuda de alguna persona AJENA al hogar en las últimas cuatro semanas?	Promedio de horas semanales de esta ayuda	¿Suelen pagar por ello?
1. Preparación de comidas	Sí ☐ 1 → No ☐ 6	☐☐	Sí ☐ 1 No ☐ 6
2. Mantenimiento de la casa	Sí ☐ 1 → No ☐ 6	☐☐	Sí ☐ 1 No ☐ 6
3. Confección y cuidados de prendas de vestir y del hogar	Sí ☐ 1 → No ☐ 6	☐☐	Sí ☐ 1 No ☐ 6
4. Jardinería y cuidados de animales	Sí ☐ 1 → No ☐ 6	☐☐	Sí ☐ 1 No ☐ 6
5. Construcción y reparaciones (incluido vehículos)[1]	Sí ☐ 1 → No ☐ 6	☐☐	Sí ☐ 1 No ☐ 6
6. Compras	Sí ☐ 1 → No ☐ 6	☐☐	Sí ☐ 1 No ☐ 6
7. Gestiones del hogar y servicios (incluido vehículos)[1]	Sí ☐ 1 → No ☐ 6	☐☐	Sí ☐ 1 No ☐ 6
8. Cuidado de niños	Sí ☐ 1 → No ☐ 6	☐☐	Sí ☐ 1 No ☐ 6
9. Cuidado de adultos	Sí ☐ 1 → No ☐ 6	☐☐	Sí ☐ 1 No ☐ 6
10. Otros (especificar) a) _____		☐☐	Sí ☐ 1 No ☐ 6
b) _____		☐☐	Sí ☐ 1 No ☐ 6

1 La diferencia entre las rúbricas 5 y 7 respecto al mantenimiento de vehículos viene definida por la acción de la persona que ayuda. Por ejemplo, si una persona le ayuda a cambiar una rueda pinchada de su automóvil se puede decir que realiza una actividad física y se incluye en la rúbrica 5, mientras que si la persona le ayuda avisando a un taller mecánico se puede decir que realiza una gestión para el mantenimiento del vehículo con lo que se incluye en la rúbrica 7.

Esta distinción también sirve para otras actividades o servicios contemplados en estas u otras rúbricas.

H. Cuestiones Generales

16. ¿Cuánto tiempo empleó en cumplimentar el cuestionario?
Indique tiempo aproximado, si no lo conoce con exactitud

Horas Minutos

17. ¿Quién cumplimentó el cuestionario?

- El entrevistador _____ ☐ 1

- Persona del hogar, especificar:

_____ ☐ 6

Instituto Nacional de Estadística

Encuesta de Empleo del Tiempo 2009-2010
Cuestionario Individual

2

NÚMERO DE CUESTIONARIO:

A. Identificación

1. Identificación de la sección

Provincia _____ ⌊⌊⌋⌋

Código _____ ⌊⌊⌋⌋⌊⌊⌋⌋⌊⌊⌋⌋ – ⌊⌊⌋⌋

Municipio _____

_____ ⌊⌊⌋⌋⌊⌊⌋⌋⌊⌊⌋⌋

Distrito/sección _____ ⌊⌊⌋⌋ – ⌊⌊⌋⌋⌊⌊⌋⌋

Año/trimestre/semana ⌊⌊⌋⌋ ⌊⌊⌋⌋ ⌊⌊⌋⌋

DOCUMENTO PROTEGIDO
INE
POR EL SECRETO ESTADISTICO

2. Datos de la vivienda y hogar

Nº de orden de la vivienda _____ ⌊⌊⌋⌋

Nº de orden del hogar _____ ⌊⌋

Código del entrevistador _____ ⌊⌊⌋⌋

Nº de orden de la persona a la que se refiere la información ____ ⌊⌊⌋⌋

3. Nombre de la persona a la que se refiere la información .....

4. Por favor, anote la fecha de cumplimentación de este cuestionario

⌊⌊⌋⌋ día ⌊⌊⌋⌋ mes ⌊⌊⌋⌋ año

Naturaleza, características y finalidad

La Encuesta de Empleo del Tiempo es una fuente de información estadística comparable a nivel de la Unión Europea, diseñada con la finalidad de obtener datos comparativos sobre el modo de vida de las personas y la distribución y utilización de su tiempo.

Legislación

Secreto Estadístico

Serán objeto de protección y quedarán amparados por el **secreto estadístico** los datos personales que obtengan los servicios estadísticos (art. 13.1 de la Ley de la Función Estadística Pública de 9 de mayo de 1989, (LFEP)).

Todo el personal estadístico tendrá la obligación de preservar el secreto estadístico (art.17.1 de la LFEP).

Obligación de facilitar los datos

Las Leyes 4/1990 y 13/1996 establecen la **obligación de facilitar los datos** que se soliciten para la elaboración de esta Estadística.

Los servicios estadísticos podrán solicitar datos de las personas físicas y jurídicas nacionales y extranjeras, residentes en España (art. 10.1 de la LFEP).

Todas las personas físicas y jurídicas que suministren datos **deben contestar de forma veraz, exacta, completa y dentro de los plazos** a las preguntas ordenadas en la debida forma por parte de los servicios estadísticos (art. 10.2 de la LFEP).

Para velar por el cumplimiento de estas normas la LFEP (art. 48) otorga al INE capacidad sancionadora.

123456789

B. Relación con la actividad económica

Las personas menores de 16 años pasen a la pregunta 17

1. La semana pasada, de lunes a domingo, ¿realizó algún trabajo remunerado (en metálico o en especie) por cuenta ajena, por cuenta propia o como ayuda familiar durante al menos una hora? Se incluye cualquier aprendizaje o formación remunerados

Sí ☐ 1 ⟶ Pasar a 4 No ☐ 6

2. Aunque no trabajase la semana pasada, ¿tenía algún trabajo del que estuvo ausente por algún motivo?
En caso de que tenga empleo pero no haya empezado todavía a trabajar en él, anote No

Sí ☐ 1 No ☐ 6 ⟶ Pasar a17

3. ¿Cuál es el principal motivo por el que no trabajó?

Vacaciones ☐ 1

Enfermedad, accidente o incapacidad temporal ☐ 2

Estudios ☐ 3

Permiso de maternidad o de paternidad ☐ 4

Conflicto laboral ☐ 5

Otro motivo, especificar: ..... ☐ 6

B.1 Trabajo principal

En este apartado, si tenía más de un trabajo, refiérase al principal.

4. ¿Cuál es la actividad del establecimiento en que trabajó la semana pasada en su trabajo principal?
Especifique la ***naturaleza concreta*** de la actividad, el ***producto que fabrica, extrae, cultiva...*** y el ***servicio que presta***. Por ejemplo: edición de libros, confección de pantalones, extracción de hulla, comercio de ultramarinos, seguros de automóviles, proceso informático de datos...

En los trabajadores cedidos por una Empresa de Trabajo Temporal se especificará la actividad del establecimiento para el que han sido puestos a disposición.

A cumplimentar por el entrevistador ↓ ☐☐

.....

.....

5. ¿Cuál es la ocupación, profesión u oficio que desempeñó en el trabajo principal la semana pasada?
Precise lo más posible, por ejemplo: dependiente de comercio, mecánico de automóviles, tornero, peón de la construcción, operador de grúa...

A cumplimentar por el entrevistador ↓ ☐☐

.....

.....

6. ¿Cuál es el número de horas semanales habitualmente trabajadas en su trabajo principal?

☐☐ , ☐ horas

7. ¿Qué tipo de jornada tiene en su trabajo principal?

A tiempo completo ☐ 1

A tiempo parcial ☐ 6

8. ¿Cómo es su jornada?

Continua ☐ 1

Partida ☐ 6

9. La semana pasada ¿cuál era su situación profesional en su trabajo principal?

Empleador o empresario sin asalariados ☐ 1 → pasar a 13

Asalariado ☐ 6

10. ¿Tiene un contrato de trabajo fijo o temporal?

Contrato de trabajo fijo o por tiempo indefinido ☐ 1

Contrato de trabajo temporal o de duración determinada ☐ 6

11. ¿Tiene horario flexible en su trabajo?

Sí ☐ 1 No ☐ 6

12. ¿Tiene un número de días de vacaciones pagadas fijadas por contrato?

En caso afirmativo anote el número de días en **una sóla** de las opciones propuestas

Sí ☐ 1 →

Nº de días al año:
- Laborables: ☐☐
- Naturales: ☐☐

o

Nº de días al mes:
- Laborables: ☐☐ , ☐
- Naturales: ☐☐ , ☐

No ☐ 6

13. Indique en qué intervalo están comprendidos sus ingresos mensuales medios netos, debidos a su trabajo principal. Incluya: la parte proporcional mensual correspondiente de las pagas extraordinarias y otros ingresos extraordinarios siempre que se perciban regularmente.

Nota: El importe neto es la paga que de hecho percibe después de las deducciones, cotizaciones y otros pagos asimilados, en el caso de trabajo por cuenta ajena.
En el caso de trabajo por cuenta propia, el importe neto se refiere al obtenido una vez deducidas las retenciones a cuenta, los pagos fraccionados y otros pagos asimilados, así como los gastos deducibles.

600 € o menos ☐ 1

De 601 a 1.200 € ☐ 2

De 1.201 a 1.600 € ☐ 3

De 1.601 a 2.000 € ☐ 4

De 2.001 a 2.500 € ☐ 5

De 2.501 a 3.000 € ☐ 6

Más de 3.000 € ☐ 7

NS/NC ☐ 8

B.2 Trabajo secundario

14. En la semana pasada, de lunes a domingo, aparte de su trabajo principal, ¿realizó también algún otro trabajo remunerado (en metálico o en especie) por cuenta ajena, por cuenta propia o como ayuda familiar durante al menos una hora?

Sí ☐ 1 No ☐ 6 ⟶ Pasar a17

15. ¿Cúal es el número de horas semanales habitualmente trabajadas en su trabajo secundario?

☐☐ , ☐ horas

16. Indique en qué intervalo están comprendidos sus ingresos mensuales medios netos procedentes de su trabajo secundario. Incluya: la parte proporcional mensual correspondiente de las pagas extraordinarias y otros ingresos extraordinarios siempre que se perciban regularmente.

Nota: El importe neto es la paga que de hecho percibe después de las deducciones, cotizaciones y otros pagos asimilados, en el caso de trabajo por cuenta ajena.

En el caso de trabajo por cuenta propia, el importe neto se refiere al obtenido una vez deducidas las retenciones a cuenta, los pagos fraccionados y otros pagos asimilados, así como los gastos deducibles.

600 € o menos ☐ 1
De 601 a 1.200 € ☐ 2
De 1.201 a 1.600 € ☐ 3
De 1.601 a 2.000 € ☐ 4
De 2.001 a 2.500 € ☐ 5
De 2.501 a 3.000 € ☐ 6
Más de 3.000 € ☐ 7
NS/ NC ☐ 8

C. Relación con la actividad

17. ¿En cuál de las siguientes situaciones considera usted que se encontraba durante la semana pasada?
Si se encontraba en varias situaciones, indique **sólo** la que considere principal.

Ocupado/a ☐ 1
Parado/a ☐ 2
Estudiante ☐ 3
Jubilado/a, prejubilado/a ☐ 4
Cobrando una pensión de incapacidad permanente o invalidez ☐ 5
Cobrando una pensión de viudedad u orfandad ☐ 6
Realizando tareas de voluntariado social ☐ 7
Realizando tareas del hogar ☐ 8
Otra situación de inactividad, especificar: ..... ☐ 9

D. Características generales

18. ¿Cuál es el estudio de más alto nivel que ha alcanzado?
Si todavía está estudiando, indique el nivel más alto que haya alcanzado.

.....

.....

A cumplimentar por el entrevistador ☐☐

19. ¿En qué país nació?

En España ☐ 1
En un país de la Unión Europea ☐ 2
En otro país ☐ 3

20. ¿Qué nacionalidad tiene? Puede marcar más de una opción

Española ☐ 1
De un país de la Unión Europea ☐ 2
De otro país ☐ 3
Apátrida ☐ 4

21. ¿Cuál es, en general, su estado de salud?

Muy bueno ☐ 1
Bueno ☐ 2
Aceptable ☐ 3
Malo ☐ 4
Muy malo ☐ 5

22. ¿Cuál es su estado civil legal?
Si está separado sólo de hecho, indique casado

Soltero/a (nunca se ha casado) ☐ 1
Casado/a (incluido pareja de hecho registrada) ☐ 2
Viudo/a que no se ha vuelto a casar (incluidos viudos/as de parejas de hecho registradas) ☐ 3
Divorciado/a que no se ha vuelto a casar (incluidos los separados legalmente y las parejas de hecho disueltas) ☐ 4

Las personas menores de 18 años pasen a la pregunta 25

23. ¿Está usted actualmente viviendo en pareja?

Sí ☐ 1 No ☐ 6

24. ¿Tiene hijos menores de 18 años que no viven con usted?

Sí ☐ 1 No ☐ 6

25. ¿Cuánto tiempo empleó en cumplimentar el cuestionario?
Indique tiempo aproximado, si no lo conoce con exactitud

☐☐ horas ☐☐ minutos

Gracias por su colaboración

A cumplimentar por el entrevistador:

26. ¿Quién cumplimentó el cuestionario?

El entrevistador ☐ 1
La persona a la que hace referencia este cuestionario individual ☐ 2
Otra persona, especificar: ..... ☐ 3 → Nº de orden ☐☐

Appendix 2 : List of activities

0 PERSONAL CARE

01 SLEEP

011 Sleep

012 Sick in bed

02 EATING AND DRINKING

021 Eating and drinking

03 OTHER PERSONAL CARE

031 Personal hygiene and getting dressed

039 Other personal care, whether specified or not

1 PAID WORK

11 MAIN WORK AND SECONDARY WORK

111 Main work and secondary work

12 ACTIVITIES RELATED TO EMPLOYMENT

121 Lunch break

122 Job search

129 Other work-related activities, specified or not

2 STUDYING

20 UNSPECIFIED STUDIES

200 Unspecified studies

21 PRIMARY SCHOOL, SECONDARY SCHOOL OR UNIVERSITY

211 Classes, courses, and conferences

212 Homework and library study

22 STUDIES DURING FREE TIME

221 Studies during free time

3 HOUSEHOLD AND FAMILY CARE

30 UNSPECIFIED ACTIVITIES FOR THE HOUSEHOLD AND THE FAMILY

300 Unspecified activities for the household and the family

31 CULINARY ACTIVITIES

311 Preparation of meals and preservation of food

312 Wash the dishes

32 HOUSEHOLD MAINTENANCE

321 Cleaning the dwelling

322 Cleaning the yard and outside of the dwelling

323 Heating and water supply

324 Various organisational tasks

329 Other household upkeep, whether specified or not

33 TAILORING AND CARE OF CLOTHING

331 Laundry

332 Ironing

333 Tailoring

339 Other tailoring and care of clothing activities, specified or not

34 GARDENING AND PET CARE

341 Gardening

342 Care of domesticated animals

343 Pet care

344 Walking the dog

349 Other gardening and care of clothing activities, specified or not

35 CONSTRUCTION AND REPAIRS

351 Construction, renovation of the dwelling

352 Repairs of the dwelling

353 Manufacturing, repair and maintenance of household equipment

354 Vehicle maintenance

359 Other activities in construction and repair, specified or not

36 SHOPPING AND SERVICES

361 Shopping

362 Commercial and administrative services

363 Personal services

369 Other purchase and service activities, whether specified or not

37 HOUSEHOLD MANAGEMENT

371 Household management

38 CHILDCARE

381 Physical childcare and supervision

382 Teaching the children

383 Reading, playing and talking with children

384 Accompanying children

389 Other childcare, whether specified or not

39 ASSISTANCE FOR ADULT MEMBERS OF THE HOUSEHOLD

391 Physical care for dependent adults who are members of the household

392 Other assistance for dependent adults who are members of the household

399 Assistance for non-dependent adults who are members of the household

4 VOLUNTEER WORK AND MEETINGS

41 VOLUNTEER WORK FOR AN ORGANISATION

411 Volunteer work for an organisation

42 INFORMAL HELP GIVEN TO OTHER HOUSEHOLDS

421 Assistance with construction and repairs

422 Assistance at work and in agriculture

423 Care for children who live in another household

424 Assistance in care for children from another household

425 Assistance for adults from other households

429 Other informal assistance, whether specified or not

43 PARTICIPANT ACTIVITIES

431 Meetings

432 Religious practices

439 Other participant activities, whether specified or not

5 SOCIAL LIFE AND RECREATION

51 SOCIAL LIFE

511 Socialising with family

512 Visiting and receiving visits

513 Parties and celebrations

514 Telephone conversations

519 Other social life activities, whether specified or not

52 ENTERTAINMENT AND CULTURE

521 Cinema

522 Theatre and concerts

523 Art exhibitions and museums

524 Libraries

525 Sporting events

529 Other recreational and cultural activities, whether specified or not

53 PASSIVE LEISURE

531 Passive leisure

6 SPORTS AND OUTDOOR ACTIVITIES

61 PHYSICAL EXERCISE

611 Walking, strolling and hiking

612 Running

613 Biking, skiing and skating

614 Ball games

615 Gymnastics, fitness and body-building

616 Water sports

619 Other physical exercise activities, whether specified or not

62 PRODUCTIVE EXERCISE

621 Productive exercise (Hunting, fishing, etc.)

63 SPORTS-RELATED ACTIVITIES

631 Sports-related activities

7 HOBBIES AND COMPUTERS

71 ARTS AND HOBBIES

711 Artistic hobbies

712 Collecting

713 Letter-writing

719 Other arts and hobbies, whether specified or not

72 INFORMATION TECHNOLOGY

721 IT programming

722 Conducting online searches

723 Online communication

729 Other computer activities, whether specified or not

73 GAMES

731 Single-player games, gambling

732 Parlour games and play

733 Computer games

739 Other games, whether specified or not

8 MEDIA

81 READING

811 Reading periodicals

812 Reading books

819 Other reading, whether specified or not

82 WATCHING TELEVISION, DVDS OR VIDEOS

821 Watching television

822 Watching DVDs

829 Watching television, DVDs or videos, whether specified or not

83 LISTENING TO THE RADIO OR RECORDINGS

831 Listening to the radio

832 Listening to recordings

839 Listening to the radio or to recordings, whether specified or not

9 JOURNEYS MADE AND UNSPECIFIED TIME USE JOURNEYS WITH A PURPOSE

900 Other journeys made with a purpose, whether specified or not

910 Commutes to or from work

920 Journeys made due to studies

930 Journeys made due to other household and family activities

936 Journeys made due to purchases and services

938 Journeys made due to childcare

939 Journeys made due to assistance for adult members of the household

940 Journeys made due to volunteer work and meetings

950 Journeys made due to social life

960 Journeys made due to other free-time activities

990 Journeys made due to changes in municipality

AUXILIARY CODES

995 Filling out the time use diary

996 Activities related to other surveys

997 Other informal activities

998 Unspecified free time

999 Other unspecified time use